APPENDIX K

DEIS PUBLIC COMMENT REPORT

This page intentionally left blank.

Table of Contents

List of Tables

Table No.

Appendices

1.0 INTRODUCTION AND GUIDE

1.1. INTRODUCTION

Pursuant to the National Environmental Policy Act (NEPA), the United States Army Corps of Engineers (USACE) must assess and consider comments submitted on the Southern Palm Beach Island Comprehensive Shoreline Stabilization Project Draft Environmental Impact Statement (DEIS) and provide responses to those considered substantive. This report describes how the USACE considered public comments and provides responses to those comments.

Following the publication of the DEIS on December 12, 2014, a 45-day public comment period was open between December 12, 2014 and January 26, 2015. This public comment period was announced in the Federal Register (79 FR 73890), on the Town of Palm Beach's website; and through email and mailings sent to interested parties, and appropriate local and state agencies. The DEIS was made available through several outlets, including the USACE website at http://www.saj.usace.army.mil/Missions/Regulatory/ItemsofInterest.aspx, and available on CD or hardcopy by contacting the USACE project manager. After reviewing the DEIS, the public was encouraged to submit comments regarding the DEIS at the public meetings, by email to the USACE project manager, or by postal mail sent directly to the USACE.

1.2. PUBLIC COMMENT MEETING

One public meeting was held on January 7, 2015 to present the DEIS, provide an opportunity for the public to ask questions, and facilitate public involvement and community feedback on the Southern Palm Beach Island Comprehensive Shoreline Stabilization Project DEIS. The 45-day comment period was extended an additional 30 days due to public comments received prior to the end of the comment period. This extension was announced on January 30, 2015 in the Federal Register (80 FR 5109).

A total of 56 meeting attendees signed in during the meeting (see Sub-Appendix K-1). The meeting was a combination of an open house format with formal presentation, and

provided attendees the opportunity to ask questions and observe informational displays illustrating the study area; the purpose, need, and objectives of the plan; and summaries of the proposed alternatives. Comments were taken orally, written, or through the reporter present at the meeting. Oral comments were limited to three minutes each and comment cards were available for written comments. If the commenter did not want to make comments at the meetings, comment sheets were available at the sign-in table and could be submitted to the USACE later. Public comments received are detailed in the following sections of this report.

1.3. METHODOLOGY

1.3.1. DEIS PUBLIC COMMENT PERIOD

During the comment period for the DEIS, seventy-seven (77) pieces of correspondence were received. Correspondences were received by one of the following methods: email, hard copy letter via mail, comment sheet submitted at the public meetings, or recorded orally during the public meeting. Each submission is referred to as a correspondence. The Content Analysis Report in Section 2.0 below presents the distribution of correspondences by correspondence type and organization type.

Once all the correspondences were received, each was read, and specific comments within each correspondence were identified. A total of 551 comments were derived from the 77 correspondences received. In order to categorize and address comments, each comment was given a subject code to identify the general content, and to group similar comments together. A total of nine (9) codes were used to categorize all of the comments received on the DEIS. The subject codes used were as follows: cost, Delft3D modeling, environmental (species/habitat concerns, etc.), geotechnical (grain size; sand source), impact analysis, mitigation reef, other (legal; NEPA; alternatives; permitting; etc.), storm protection, and Uniform Mitigation Assessment Method (UMAM). In some cases, more than one code may be applicable to a comment, reflecting the fact that the comment may contain more than one issue or idea. If possible, the comment was broken down into the respective codes; however, cases in which this was not feasible the comment was

addressed as a whole and assigned a single code. For example, comments regarding modeling analyses may also contain issues related to geotechnical topics.

The Content Report in Section 2.0 presents the distribution of correspondences by subject code and the Concern Report in Section 3.0 further breaks down these subject codes into concern statements within each code. Following each concern statement are one or more "representative quotes" which are comments taken from the correspondence to illustrate the issue, concern, or idea expressed by the comments grouped under that concern statement. The comment matrix in Sub-Appendix K-3 provides the USACE response to each comment received.

1.3.2. GUIDE TO THIS DOCUMENT

This report is organized as follows:

Content Analysis Report: This is the basic report that provides information on the numbers and types of correspondences received and comments by subject code. Data are presented on the correspondence by type (i.e., amount of emails, letters, etc.) and amount received by organization type (i.e., organizations, governments, individuals, etc.). A summary is provided of the total number and percentage of comments that fall under each subject code.

Concern Report: This report summarizes the comments received during the DEIS public review comment process. These comments are organized by codes and further organized into concern statements. Representative quotes are then provided for each concern statement. An agency response is provided for each concern statement in the comment matrix in Sub-Appendix K-3.

Sub-Appendix K-1: DEIS Public Meeting Sign-In – All public DEIS meeting attendees were asked to sign in. When provided, the name, affiliation, address and/or email of the attendees are included.

Sub-Appendix K-2: Correspondence List – This appendix provides a list of each organization type, the corresponding affiliations, and the number of correspondences submitted.

Sub-Appendix K-3: Comment Matrix – The comment matrix presents all comments and USACE responses in spreadsheet form.

Sub-Appendix K-4: DEIS Public Meeting Oral and Written Comments – This appendix includes all of the written and oral comments submitted at the DEIS public meeting. The oral comments are provided within the official transcript of the meeting minutes.

2.0 CONTENT ANALYSIS REPORT

The tables below summarize the distribution of public comments by correspondence type, organization, and subject code. It is important to note that often within a single correspondence there were multiple comments.

Table 2-1. Distribution by correspondence type.

Type of Correspondence	Number of Correspondences	Percent of Correspondences
Public Comment Period (email/letter)	53	69%
Public Meeting (oral comment)	16	21%
Public Meeting (written comment)	8	10%
TOTAL	**77**	**100%**

Table 2-2. Correspondence distribution by organization type.

Organization Type	Number of Correspondences	Percent of Correspondences
County Government	1	1%
Environmental Group	5	6%
Federal Agency	6	8%
Municipality	7	9%
Non-Governmental Group (NGO)	48	62%
Resident	7	9%
State Agency	3	4%
TOTAL	**77**	**100%**

Table 2-3. Comment distribution by subject code.

Subject	Number of Comments	Percent of Comments
Cost	18	3%
Delft3D Modeling	84	15%
Environmental (species, habitat concerns, etc.)	48	9%
Geotechnical (grain size, sand source)	56	10%
Impact Analysis	39	7%
Mitigation Reef	20	4%
Other (legal, NEPA, alternatives, permitting, etc.)	188	34%
Storm Protection	44	8%
Uniform Mitigation Assessment Method (UMAM)	54	10%
TOTAL	**551**	100%

3.0 CONCERN REPORT

Subject: Cost

Concern Statement: Commenters suggested to reexamine the cost comparison between using offshore dredged sand versus using upland sand as the source for the Town of Palm Beach segment of the Project and to provide greater details regarding mitigation costs.

Representative Quote(s): "We did a cost comparison of Ortona sand at 0.57 mm recently, very recently, and the unit cost of sand we found for recent projects in these areas is $35 to $40 per cy. The Stuart mine source which is used by Indian River County and many counties where you can specify the amount of shell content and they screen it so you exclude fines, you can specify a minimum of no more than 0.25 or 0.3 mm is $32 to $35 a cy. Keep in mind oil prices are plummeting and so is the cost of trucking sand because as your fuel to fill your car goes down the fuel to fill the tanks to truck sand goes down. Finally, offshore sand, poor quality at average sand size results in a cost of $30 a cy based on the recent Mid-Town Project or $46 a cy if you consider the inconsistency of the sand. So, therefore, in your table where you state that the Town's project will only cost $10 a cy to use offshore sand is a gross inaccuracy. It doesn't include the cost of mobilization, the cost of dredging and hydraulic conveyance, sand placement, grading, site restoration, beach tilling turbidity nor the cost of the original sand source investigation which was over $2 million to permit and design the offshore sand source."

-Karyn Erickson, P.E., representing The Coalition to Save Our Shoreline, Inc. (SOS), Comment #65

"The other issue is hardbottom mitigation because the report creates confusion on that point especially with respect to the amount of hardbottom mitigation that the Town is required to take on and how much hardbottom mitigation that the County is required to perform. There is a significant difference between the two. Something like 0.5 ac I think for the Town and something like 4.2 ac for the County. That's not clear in the report. At least I didn't get it. At 1 million an acre, 1 million an acre there's a tremendous savings and a tremendous difference for our Town. Moreover, because mitigation costs could be less for us than originally thought, there's a good possibility that we could ask for more sand in Reach 8 than we originally thought we could simply because of the fact that we thought hardbottom mitigation costs would be so high."

-Lew Crampton, Citizens' Association of Palm Beach, Comment #45

Subject: Delft3D Modeling

Concern Statement: Commenters suggested additional modeling analyses be conducted using both smaller and larger grain sizes.

Representative Quote(s): "Further, it does not evaluate the differences in sediment erosion rates and longevity nor its impact on the adjacent hardbottom using coarser sand at 0.57 mm or 0.45 mm which is closer to native sand and the 0.25 mm. There's only 1 type of sand that was analyzed."

-Karyn Erickson, P.E., representing The Coalition to Save Our Shoreline, Inc. (SOS), Comment #53

"The sand specification used within the modeling study does not accurately represent the possible grain sizes that may be encountered during dredging or that may be obtained from upland mines. The BMA sand specification ranges from 0.25 to 0.60 mm, and all analyses should be consistent with both the specifications for this project and the BMA. The mean grain size of the dredged and stockpiled material indicates the sand to be placed will be finer than indicated in the models run, while the mean grain size of the upland material indicates the sand to be placed will be coarser than indicated in the models run. These differences may change the predicted project performance and lifetime."

-Robert Buda, Florida Department of Environmental Protection (FDEP), Comment #88

Subject: Environmental

Concern Statement: Commenters asked that more clarification be given on the recovery period of benthic infauna within the Project Area in relation to the anticipated renourishment interval.

Representative Quote(s): **"**This Section states that there will be no significant impact to benthic infauna; however, project maintenance is anticipated to occur at least every four years and the DEIS and referenced literature state that it takes nine months to four years for infauna to recolonize an area. The cumulative effect of this Project, combined with other local nourishment projects, should be considered with respect to nearshore infaunal communities."

-Penny Cutt, Coastal Systems International, Inc. (Coastal Systems), on behalf of the Town of Palm Beach, Comment #297

Subject: Geotechnical

Concern Statement: Commenters suggested reevaluating the project performance of offshore sand versus upland sand.

Representative Quote(s): **"**The Draft EIS treats all project alternatives and all sand sources as the same. They are not the same. The differences in the quality of sand and the resulting impacts on performance and environmental impacts are not sufficiently evaluated in the Draft EIS. The compatibility of the sand, and therefore project performance, increases with the mean grain size as it approaches the native mean grain size of 0.43mm. The quality of sand and its impact on project life (i.e. nourishment interval) requires additional evaluation and sensitivity analysis."

-Karyn Erickson, P.E., representing The Coalition to Save Our Shoreline, Inc. (SOS), Comment #549

Subject: Impact Analysis

Concern Statement: Commenters suggested a detailed explanation of the time-average methodology used for the hardbottom impact analysis be included in the EIS.

Representative Quote(s): **"**At this time, the Beaches, Mining, and ERP Support (BMES) group does not agree to accept the proposed time-averaged estimate of hardbottom impact acres. The department typically considers current conditions of the assessment area and uses historical information to determine the ephemeral / persistent nature of hardbottom resources. BMES requests additional information on the methods that were used to delineate hardbottom for impact acreage estimations, including how the position of the seaward edges of hardbottom areas were determined. Please recalculate the acreage of hardbottom within the influence of the project prior to permitting."

-Robert Buda, Florida Department of Environmental Protection (FDEP), Comment #91

"There is no clear explanation in the DEIS or any of the Appendices as to how the time averaged area of exposed hardbottom between 2003 and 2013 was calculated. Therefore, the accuracy of the hardbottom impact calculations cannot be properly evaluated. There is additionally no reference to consultations with regulatory agency staff, policy, or precedent confirming the likelihood of agency approval of the calculated hardbottom impact area/mitigation based on the time averaged hardbottom area. This information should be presented within the DEIS for review."

-Penny Cutt, Coastal Systems International, Inc. (Coastal Systems), on behalf of the Town of Palm Beach, Comment #197

Concern Statement: Commenters suggested that the time-averaged hardbottom analysis should exclude years of the highest and lowest hardbottom exposure.

Representative Quote(s): **"**The County does not agree with including years 2006 and 2007 in the 10-year time average as the high rate of exposure of the hardbottom resources is directly related to hurricane impacts. In 2004, Hurricanes Frances (Category 2) and Jeanne (Category 3) both made landfall just north of Palm Beach County within the same month of September. The following year, Hurricane Wilma, a Category 3 storm, impacted the already battered beaches of Palm Beach County. Natural recovery of the beaches was slowed by the numerous tropical and nor'easter storm events that followed. In 2007, storm events impacted the County including Tropical Storm Noel and Subtropical Storm Andrea, which required an emergency declaration due to the extent of the erosion. Delineation of the hardbottom (R127 – R141+586) included

within the DEIS (Table 3-3 – Page 3-10) demonstrates that years 2006 and 2007 had an exceptionally high rate of exposure. In 2006, 51.20 acres of ephemeral nearshore hardbottom was exposed while 41.69 acres were exposed in 2007. This high rate of hardbottom exposure is due to a series of storms and is not necessarily a true representation of typical hardbottom exposure."

-Kim Miranda, Palm Beach County, Comment #131

Concern Statement: Commenters suggested that additional discussion be provided within the cumulative impact analysis.

Representative Quote(s):"This Section also states that "The anticipated effects associated with the proposed Project and the long-term and cumulative effects associated with the reasonably foreseeable actions are not anticipated to result in any measurable cumulative losses of ecological functions and services, or cumulative impacts on EFH or managed species." However, given the other projects anticipated in the reasonably foreseeable future within this region and the anticipated nourishment cycle of 2 to 4 years for this Project, a measurable cumulative loss of this ubiquitous habitat may become apparent. Additional discussion of cumulative ecological losses may be warranted here."

-Penny Cutt, Coastal Systems International, Inc. (Coastal Systems), on behalf of the Town of Palm Beach, Comment #353

Concern Statement: Commenters suggested that further explanation and detail should be given regarding the ETOF and modeling analyses used.

Representative Quote(s):"The Equilibrium Toe of Beachfill ("ETOF") methodology followed in the DEIS does not conform to the established and accepted methods approved by the Florida Department of Environmental Protection (FDEP) or conform to these a profile translation or equilibrium profile methods, nor are the DEIS calculations, assumptions and figures provided to support the method proposed."

-Karyn Erickson, , P.E., representing The Coalition to Save Our Shoreline, Inc. (SOS), Comment #512

Subject: Mitigation Reef

Concern Statement: Commenters suggested that further details should be provided regarding the site selection, design, and success criteria for the mitigation reef.

Representative Quote(s): "This Section states that the selected site will have an "Underlying sediment thickness between 1 and 4ft." However, the proposed boulders will have a maximum diameter of 4ft and as such, may completely subside. It is understood that the artificial reef will be replicating ephemeral hardbottom; however, if the artificial reef is buried, then it is not replacing lost aquatic functions and values. Please discuss how maintenance of the required sand/hardbottom ratio will be ensured over time."

-Penny Cutt, Coastal Systems International, Inc. (Coastal Systems), on behalf of the Town of Palm Beach, Comment #405

Subject: Other

Concern Statement: Commenters requested the SOS plan, as it was designed by Erickson Consulting Engineers, be given equal consideration.

Representative Quote(s): "The SOS volume of 99,100 cy was assuming a 3-4 year renourishment with 2 structures towards the south end to slow erosion. It also assumed a coarse sand that was comparable to Ortona or upland mined sand. This is a significant discrepancy by modeling what is referred to as the SOS design using 0.3 mm sand when, in fact, the Town is proposing sand that could be as fine as a mean grain size of 0.25 mm; therefore, the results are not reflective of the Town's proposal. And when we say "mean" that means that 50% of that sand could be 0.1 mm, 0.12 mm, 0.15 mm, substantially finer sand."

-Karyn Erickson, , P.E., representing The Coalition to Save Our Shoreline, Inc. (SOS), Comment #55

"Complete the modeling of the project with Ortona sand and structures proposed by The Coalition To Save Our Shoreline, Inc. (S.O.S.), and report the results including storm protection benefits, environmental impacts, project life, and estimated cost."

-Thomas Bradford, Town of Palm Beach, Comment #187

"By excluding the SOS Erickson project and not modelng its effectiveness you did not get a clear picture of how that

alternative provides maximum shoreline protection like reduction and overtopping with minimal hardbottom coverage and impact on aquatic resources. A detailed analysis of that project must be included in the final EIS."

-Larry Goldberg, Citizens' Association of Palm Beach and The Coalition to Save Our Shoreline, Inc. (SOS), Comment #32

Concern Statement: Commenters suggested that a contiguous beach fill template approach should be considered for the Project.

Representative Quote(s): "You revised your approach to the analysis of the project. You originally considered them as similar and said that they should be evaulated together. Now you say they're not connected. This flies in the face of the scope of the FDEP BMA which is doing inlet-to-inlet analysis and the Woods Hold group which recommends, at a minimum, using groups of reaches for better management. There should be no gaps in contiguous beach dune projects to ensure that there will be continuous shoreline protection. The plan that we have shows 2 beach nourishment projects separated by a dune-only project and that doesn't work, we've seen that before. It just helps the beach areas wash away."

-Larry Goldberg, Citizens' Association of Palm Beach and The Coalition to Save Our Shoreline, Inc. (SOS), Comment #31

"There should be no gaps in contiguous beach/dune projects to insure that there will be continuous shoreline protection. Just look at the plan view (figure 2-2 on p. 2-19) which shows unacceptable short stretches of beach nourishment separated by a dune only portion. The protection of this plan vs. a continuous beach nourishment project like the SOS (Erickson) project should be evaluated to determine the best solution. Dr. Robert Dean, a coastal expert, (as noted on page 74 of Judge Meale's ruling on the original Reach 8 permit) said "a beach nourishment project of less than one mile is not effective". As you have said: "The goals and objectives for the shoreline protection projects are to provide more sand into the littoral system and create a higher profile beach and dune that will buffer the effects of storm surge and wave action, and protect upland infrastructure. The Project will minimize future adverse storm induced effects by nourishing the beach to replace the sand that has been lost due to erosion". Plans which include a dune only segment will not meet those targets."

-Larry Goldberg, Citizens' Association of Palm Beach and The Coalition to Save Our Shoreline, Inc. (SOS), Comment #97

Concern Statement: Commenters suggested that the purpose and need for the Town of Palm Beach and Palm Beach County be clarified and checked for consistency throughout the EIS.

Representative Quote(s): "Life expectancy of the preferred alternative is 2 to 4 years for the Town of Palm Beach and 2-3 years for Palm Beach County. The public notice for The Town of Palm Beach states, "This project is a one-time beach nourishment project." The EPA is concerned about the purpose and need of the project since it states this is a one-time project with a life expectancy of only 2 to 4 years with permanent impacts to 2.99 acres of nearshore hardbottom resources. EPA requests clarification and recommends the Corps better describe the project purpose and need in the FEIS."

-Heinz Mueller, Environmental Protection Agency (EPA), Comment #73

"The DEIS states in the second paragraph that the "proposed projects are one-time projects" however the County's project requires maintenance approximately every three years. Initial placement CY should be presented as well as maintenance CY."

-Kim Miranda, Palm Beach County, Comment #137

"The Town and County (Applicants) goals and objectives for the Project vary throughout the document. Consistent goals and objectives should be identified and presented in the DEIS and the Appendices."

-Penny Cutt, Coastal Systems International, Inc. (Coastal Systems), on behalf of the Town of Palm Beach, Comment #207

Concern Statement: Commenters expressed concerns regarding the previous litigation addressing the use of offshore sand in the Town of Palm Beach project.

Representative Quote(s): "The concern that the Town's use of dredged materials for Reach 8 will simply result in a repeat of the waste of time, effort, and substantial Town funds which occurred as a result of the Surfrider Foundation litigation, in which the Administrative Law Judge ruled against the Town, and made detailed findings of fact adverse to the use of offshore sand within Reach 8."

-Bukk Carleton, The Coalition to Save Our Shoreline, Inc. (SOS), Comment #475

"In the end, after publishing no less than three (3) notices to the public, as well as making the affirmative representation at the Public Scoping meeting that all sand for the Project was to be sourced from an upland sand mine and accepting public comments which relied upon such representations, it would be a violation of NEPA if the USACE did not start over and hold a new Scoping Meeting which fully, fairly and completely disclosed the Town's change in preference from upland, mined sand to dredged sand. Likewise, it would improper for the USACE to issue a Final EIS without performing an alternative analysis utilizing upland, mined sand for the Town's portion of the Project so that (at a minimum) a side by side comparison can be made in the differences in grain size, compatibility with the natural beach, turbidity, the amount of overfill which may be required, and the resulting impact on the surrounding environment. Failure of the USACE to take these steps will render any result permit(s) vulnerable to a legal challenge which would cost far more in time, effort and money to address than merely holding a new Scoping Meeting, performing a full analysis, and/or making any resulting modifications to the Draft EIS."

-Bukk Carleton, The Coalition to Save Our Shoreline, Inc. (SOS), Comment #486

Subject: Storm Protection

Concern Statement: Commenters requested that the USACE consider a project that provides 25-year storm protection.

Representative Quote(s): "The failure of the EIS to take into consideration the Town's written request contained within its April 29, 2014 correspondence to "give equal consideration to 25 year storm protection to the upland properties of the project shoreline of Reach 8"."

-Bukk Carleton, The Coalition to Save Our Shoreline, Inc. (SOS), Comment #479

"USAC of Engineers must provide a 25 year solution."

-Jean Cohen, Town of Palm Beach Resident, Comment #1

Concern Statement: Commenters requested clarification be given on the level of storm protection provided and nourishment interval for the Project.

Representative Quote(s): "This Section goes on to state that the Applicants are attempting to provide long-term storm protection and to mitigate shoreline erosion. However, the alternatives evaluated all provide four years or less of storm protection between nourishment events, none of which would be considered long-term. This EIS does consider cumulative impacts; however, the proposed Project is for a single nourishment event."

-Penny Cutt, Coastal Systems International, Inc. (Coastal Systems), on behalf of the Town of Palm Beach, Comment #217

Subject: Uniform Mitigation Assessment Method (UMAM)

Concern Statement: Commenters suggested that the term "secondary impacts" be clarified.

Representative Quote(s): **"**NMFS requests the Final EIS and EFH assessment more clearly explain the timing and severity of the impacts. National Environmental Policy Act (NEPA) regulation §1508.21 specifies impacts can be (1) direct, (2) indirect, or (3) cumulative. However, the Draft EIS and Draft EFH assessment refer to impacts as direct, indirect, cumulative, and secondary (emphasis added). The Jacksonville District appears to use the term secondary to refer to indirect impacts it judges to be less severe. NMFS requests the Final EIS and EFH assessment define "secondary impact" and relate that definition to those in the NEPA regulations for direct and indirect impacts. If the NEPA categories are sufficient for the Project, NMFS recommends the Final EIS and EFH assessment not use the term "secondary impacts.""

-Virginia M. Fay, National Marine Fisheries Service (NMFS), Comment #109

Concern Statement: Commenters suggest that the traditional ETOF method for assessing impacts be used.

Representative Quote(s): "The DEIS considered multiple categories of potential impacts to nearshore hardbottom, including direct, secondary, temporary, and permanent impacts. During the department's permitting process, all resources within the equilibrium toe of fill (ETOF) will be considered to be directly and permanently

impacted because the fill template will be maintained over time. Resources located within the predicted ETOF will be subject to continual impacts from subsequent nourishment events; therefore, please revise the DEIS to indicate that all resources within the predicted ETOF will be directly and permanently impacted by the project."

-Robert Buda, Florida Department of Environmental Protection (FDEP), Comment #92

Concern Statement: Commenters suggested reevaluating index values and the worksheet format.

Representative Quote(s): "The Draft Uniform Mitigation Assessment Method (UMAM) Analysis contained within Appendix H is not consistent with the procedures defined within Chapter 62-345, Florida Administrative Code (F.A.C.). For example, an impact area cannot be considered partially-self mitigating, a mitigation area score cannot include two unrelated polygons (impact area and artificial reef), and the score for one area cannot be subtracted from the score for another area. Additionally, per the UMAM Rule, for areas being filled, all three category scores should go to zero, since all aquatic functions and values of the polygon, as defined in Part I, are lost when that polygon is filled. Justification from the agencies for the application of UMAM presented in Appendix H should be presented."

-Penny Cutt, Coastal Systems International, Inc. (Coastal Systems), on behalf of the Town of Palm Beach, Comment #203

"If maintaining seven impact area categories, the UMAM worksheets should be organized so as to present Part I followed by Part II for each impact type (1 through 7), Part I followed by Part II for the artificial reef for the Town, and Part I followed by Part II for the artificial reef for the County. Corresponding graphics depicting the polygons evaluated in each Part I/Part II set should be referenced and included. Impact area polygons do not need to be contiguous; however, they must be adequately described by the same Part I."

-Penny Cutt, Coastal Systems International, Inc. (Coastal Systems), on behalf of the Town of Palm Beach, Comment #217

SUB-APPENDIX K-1

DEIS PUBLIC MEETING SIGN-IN

This page intentionally left blank.

Southern Palm Beach Island Comprehensive Shoreline Stabilization Project
Environmental Impact Statement
DEIS Public Meeting

NAME	EMAIL ADDRESS	AFFILIATION
Ed Tichenor	etichscuba@aol.com	PBC Reef Rescue
Karyn Erickson	karynerickson@ericksonconsultingengineers.com	
Robert Davidow	robert.davidow@gmail.com	Citizen
Madelyn Greenberg	coalitionsos@yahoo.com	Coalition SOS
Richard Hureqs	3360 S. Ocean Blvd	SOS
Eileen Curran	ECC43@aol.com	SOS
Connie Gasque	cgasque@bellsouth.net	Reef Rescue
John Eubanks	jeubanks@blesmlmo.com	Council for Conservation
Brad Rosov	brad.rosov@cbi.com	CPE
Michael Schart	mschart@schartbrothers.com	Resident
Tom Pierro	thomas.pierro@cbi.com	CB&I
Katy Brown	Kathryn.brown@cbi.com	CBI
~~Connie Gasque~~	<	
~~[illegible]~~		
Penny Townsend	penelope.d.townsend@gmail	TC
Greg Silpe	gsilpe@comcast.net	RESIDENT
Bill Diamond	WJD2332@AOL.com	"
[illegible]		PBDN
Jordon Cheifet	jcheifet@coastalsystemsint.com	CSI
Gail Coniglio		T. of PB
Deborah Michael Pucillo	ddpucillo1@mac.com	T of PB
Todd Remmel	tremmel@surfriderpbc.org	Surfrider Foundation
Madeline Shapiro		Resident Reach 8
[illegible]	[illegible]	SPB
Lee [illegible]	LDGPGA@GMAIL.COM	PB
Michael Grady	3454 S. Ocean Blv	P.B.
Kim Miranda	Kmiranda@pbcgov.org	PBC

Southern Palm Beach Island Comprehensive Shoreline Stabilization Project
Environmental Impact Statement
DEIS Public Meeting

NAME	EMAIL ADDRESS	AFFILIATION
GERALD FRANK	JERJUNF@YOO.COM	CIT. ASSC OF PB
David Swigler	David.Swigler@cbi.com	CB&I CPE
Bob Carlella	bgc@valley.net	
Michael Stahl	mstahl@pbcgov.org	PBC ERM
LARRY GOLDBERG	larryccim@aol.com	CITIZEN-SOS
Toni Kanelli		
Michael Grady		
Heath Chute	manager@bellairecondo.com	citizens/SOS
NED BARNES	nedbarnes@palmbeachcivic.org	PB CIVIC
Erik Fischer	efwrestle@aol.com	
Mike Jenkins	mjenkins@appliedtm.com	ATM

Southern Palm Beach Island Comprehensive Shoreline Stabilization Project
Environmental Impact Statement
DEIS Public Meeting

NAME	EMAIL ADDRESS	AFFILIATION
Mr & Mrs Stephen Goldberg	3100 S Ocean Blvd	
LEN CRAMPTON	LENCRAMPTON@GMAIL.COM	CITIZENS ASSOCIATION
Leanne Welch	lwelch@pbcgov.org	PBC
Joan Galiardo	3400 S. Ocean Blvd	PB resident
JOHN GALIARDO	" "	SOS
Charles D. Bonanno	3360 S. Ocean Blvd. 6FN	SOS P.B. Domicilary
FRANK MARTORANA	3170 S. Ocn Blv	SOS & Citizens
Norma Shapiro	3170 S. Ocn Blv	" "
IRA SMITH	3170 S Ocean Blvd	
Sydell Smith	3170 S. Ocean Blvd	
Jean Cohen	3400 S Ocean Blvd	PB resident
Mark Cohen	3400 S Ocean Blvd	PB resident
FLORENCE MASCOTT	3400 S OCEAN BLVD	PB Resident
Thomas B. Bradford	tbradford@ptown	TOWN

Southern Palm Beach Island Comprehensive Shoreline Stabilization Project
Environmental Impact Statement
DEIS Public Meeting

NAME	EMAIL ADDRESS	AFFILIATION
Danielle H. Moore	JUKIE85C@aol.com	TOWN COUNCIL
Bonnie Fischer	h2obon@aol.com	S.PALM BCH
Stacy Buck	stacy.buck@cbi.com	CBI
Lauren Floyd	lauren.floyd@cbi.com	CBI

SUB-APPENDIX K-2

CORRESPONDENCE LIST

This page intentionally left blank.

Table 1-1. Correspondence list by organization type and affiliation.

Organization	Number of Correspondences
County Government	
Palm Beach County	1
Environmental Group	
Reef Rescue	1
Sierra Club	1
Surfrider Foundation	3
Federal Agency	
Environmental Protection Agency (EPA)	3
National Park Service (NPS)	1
National Marine Fisheries Service (NMFS)	2
Municipality	
Town of Manalapan	1
Town of Palm Beach	6
Non-Governmental Group (NGO)	
Citizens' Association of Palm Beach and SOS	3
Citizens' Association of Palm Beach	2
The Coalition to Save our Shorelines, Inc. (SOS)	43
Resident	
Resident	7
State Agency	
Florida Department of Environmental Protection (FDEP)	1
Florida Department of State, Division of Historical Resources	2
TOTAL	**77**

Southern Palm Beach Island Comprehensive Shoreline Stabilization Project Public Comment Matrix with Response

CC	Complete concurrence, change/update made
PC	Partial concurrence, partial change/update made
NC	No change made; see response for justification
ACK	Acknowledged

Comment No.	Agency/ Affiliation	Commenter	Comment	Notes/Response
1	Resident	Jean Cohen	USAC of Engineers must provide a 25 year solution.	The purpose and need was revised to reflect the Town's desire to provide 25-year storm protection to habitable buildings currently without seawalls. The preferred alternative meets the USACE's overall project purpose.
2	Resident	Mark Cohen	The beaches in Reach 8 are a precious asset to the residents in that area. Logic dictates that the proper course of action is to be conservative in the approach to replenishing and protecting the beaches in a 25-year plan...even at the risk of overspending up from, to avoid potentially more costly problems on the back side.	See response to Comment #1.
3	Citizens' Association of Palm Beach	Lew Crampton	The report does not make clear the amount of mitigation is the responsibility of the Town of Palm Beach and the amount that Palm Beach County is responsible for. This is significant because a major variation exists between the two jurisdictions. At $1 million/acre, the Town had a much lower hurdle to cross. This has implications for both policy and economic decisions. I read this entire report and – if I am mistaken and the differential is cited somewhere, it needs to be made much clearer.	Table 2-3 provides the cost of each aspect of the alternatives and summarizes the costs for Alternatives 2 thorough 7b for the Town of Palm Beach and Palm Beach County's separated projects. Tables 5-4 through 5-7 summarize the impact and associated mitigation acreages for each alternative that may be required for the Town of Palm Beach and Palm Beach County's separated projects based on grain size modeled. Changes were made due to additional modeling.
4	SOS	John R. Eubanks Jr.	Address issues raised in correspondence dated 1/6/14 to USACE.	
5	Surfrider Foundation	Todd Remmel	Comment on offshore borrow areas.	See response to Comment #9
6	SOS	Terri Rovelli	We live in the Reach 8 area ocean front and the hardbottom rock is covered with sand 90+% of the time. Adding sand would not impact fish as they are only there for a few weeks a year. We deserve to be able to use the ocean for swimming. The coral reef is 100-150' offshore is the home for the fish. They are not a threatened or endangered species. We need sand for turtle nesting. Reach 8 should not be discriminated against.	Review text (section 3.7.1.1; App F section 4.1.3) Revised text (section 3.7.1.1; App F section 3.1.1)
7	Resident	Gregg Silpe	I am in favor of the preferred plan. I have been a seasonal resident for 43 years. I am concerned about the environment but I am more concerned about protection of upland structures and beach recreation. I am an avid fisherman, diver, surfer and beach comber. I am on the beach daily. Studies show over 80% of the erosion is a result of inlet dredging. If the USACE are causing this problem please don't stand in the way of fixing it in a cost effective, responsible manner. Thank you.	

8	Resident	Ira Smith	We can learn from children. Three Little Pigs, a childs fairy tale. The Wolf blew down the house of Straw he blew down the house of Sticks. He could not blow down the house of bricks. Storm Protection is most important. Cost including mitigation costs are significantly greater but so is the protection. Do we want to fall short or build a storm protection that can keep us safe.	
9	Surfrider Foundation	Todd Remmel	The plan proposes using sand from the north borrow area1, south borrow area 2, south borrow area 3, or "any offshore sand source that is consistent with BMA cell-wide sediment quality specifications." And I think the criteria is a bit more stringent than the original Reach 8 sand quality. I think a couple of the borrowed sites previously explored for Reach 8 wouldn't meet the grain size or Munsell requirements of the current BMA, but I feel it's worth asking what the new criteria will mean in terms of sand sources that can be used.	The County has stated their preference to utilize upland sand and the Town of Palm Beach has stated their preference to utilize stockpiled dredged sand from offshore borrow areas but has not ruled out the possiblity of using upland sand. The sand source must meet the FDEP sand quality compliance specifications as per the BMA (FDEP, 2013) regardless of source location; therefore only sand sources meeting these specifications will be used.
10	Resident	Michael Scharf	Why is there no need to further consider the SOS Plan?	The SOS alternative was originally considered in Appendix G. After review of public comments, the SOS alternative was re-analyzed and is presented in throughout the EIS and appendices as Alternative 7b.
11	Resident	Michael Scharf	The plan, Alternative 2, provides for just dune restoration which at best gives you 15-year storm protection, from I understand, versus the Town and other parts, other than Reach 8, the objective is to get 25-year storm protection, i.e. beach restoration, not just dune restoration.	Alternative 2 also provides for placement of sand on the beach and below mean high water. Also, see response to Comment #1.
12	Resident	Michael Scharf	The proposal uses an inferior quality of sand, smaller grain size and that requires more sand to be used.	See response to Comment #9.
13	Resident	Michael Scharf	The SOS plan would provide 25-year storm protection versus a temporary fix.	See response to Comment #1.
14	Resident	Michael Scharf	We tried the temporary fix in the past, in 2006, with the same inferior type of sand and sand size that is being proposed now. It washed away.	See response to Comment #9.
15	Resident	Michael Scharf	Mined sand, as I understand it, could be more consistent in terms of grain size and if what is proposed is an average grain size of 0.25 mm when what's really desirable is grain size of 0.38 to 0.42 mm, why aren't we going for what's desirable?	See response to Comment #9.
16	Reef Rescue	Connie Gasque	I think the only real solution to Reach 8 is using upland sand source and make sure that it's washed and make sure that random truckloads need to be inspected - you're going to be paying a lot more money for it once but it's going to stay on the beach. It's not going to cause the environmental impact that the other alternatives are and it is good quality sand. Borrow areas 2 and 3 are a disaster. We're going to find out about borrow area 1, whether it's good or not, because there's pictures here that show it's still black.	See response to Comment #9.
17	SOS	Bukk Carleton	We've already run through and been shot down by the FL Dept. Judicial Branch for having a plan that calls for dredged sand and calls for miniscule sand. So why go through it again?	See response to Comment #9.
18	SOS	Bukk Carleton	Now the second thing wrong with this plan is we have 25-year plans for half of Palm Beach and 15-year plans, which really isn't a plan because it hardly even gets you to hurricane status.	See response to Comment #1.
19	SOS	John R. Eubanks Jr.	Let's put in place a plan which is similar to the rest of the Town that provides for a 25-year storm period and the protection from that.	See response to Comment #1.
20	SOS	John R. Eubanks Jr.	Now the problem is, looking through the 6 alternatives you've given and the reason I asked about the SOS plan because I didn't see it in those six, none of those do what is being done for the rest of the Town for the 25-year storm period.	See response to Comment #10.
21	SOS	John R. Eubanks Jr.	There's a letter from the Town Council itself back in April saying, hey, we would ask you, USACE, to give the same consideration SOS has brought this to us, we want you to give the same consideration and, in fact, look at the 25-year storm protection. So we'd ask you to do that too.	See response to Comments #1 and 10.

22	SOS	John R. Eubanks Jr.	The second issue is quality of sand. Clearly it doesn't mean anything if we get loose and that you have to put 2 or 3 tons more on the beach expecting a lot of it to wash away. Most of the people in this room probably saw in 2006 offshore dredge materials go onto Reach 7, I think it was, and 85% of it washed away in less than 3 years.	See response to Comment #9.
23	SOS	John R. Eubanks Jr.	The other aspect is why would the Town of Palm Beach allow itself to do something different than the County. The County is using sand of a better quality and it's going to stick. It's going to settle better. There's not going to be as much problem with the hardbottom. There's not going to be any problems with native species.	See response to Comment #9.
24	SOS	Richard Hunegs	If you look at the grain size of sand that's proposed here it's a repetition of 2006. You're going out in borrowing sites in the ocean when mined sand is available to the Town on the land. If it means that we're somehow saving money, I don't see that because we keep repeating the same mistake every three years.	See response to Comment #9.
25	SOS	Richard Hunegs	The Town's consultants have, once again, advised the use of the lowest possible grades of sand to be dredged from the ocean unlike the County that's getting it from an on-land site where they can inspect it and see it. And it's placed on dunes as a band-aid to solve the critical erosion problem.	See response to Comments #9 and 11.
26	SOS	Richard Hunegs	We don't want a project that creates and compounds the problems that you addressed before when you were talking about nesting sea turtles and the other sea life that we need to be concerned about.	See response to Comments #9 and 16.
27	SOS	Richard Hunegs	I don't know why Palm Beach County has devised a plan that's better that the plan that the Town of Palm Beach has devised, and the Town of Palm Beach doesn't want to engage with the County. The County has offered to do that. That would solve the substantial part of the problems that we are concerned with.	
28	SOS	Richard Hunegs	Here in the Town of Palm Beach the conservative thing to do is preserve our beaches and to do this correctly one time.	See response to Comment #11.
29	Citizens' Association of Palm Beach and SOS	Larry Goldberg	My hope was that you would have an open process which would help develop much needed shoreline protection. However, no progress meeting, as called for in the CBI scope of services, was held to review the status of project design analysis and obtain stakeholder input, so now we have to comment on the finished DEIS report.	As per the NEPA process, public involvement occurs during the public scoping meeting and during the public comment periods following the release of the DEIS and PFEIS. This process has been adhered to. Progress meetings occur between agencies, the applicant, and the third party contractor.
30	Citizens' Association of Palm Beach and SOS	Larry Goldberg	You now state that your overall project purpose you chose a 15-year interval criteria for evaluating upland infrastructure protection. This is not consistent with anything that we've received from anybody. The Woods Hole Group has said that you should have a 25-year interval for beach restoration and a 15-year interval for sacrificial dunes. Woods Hole also said that for sacrificial dunes you need a 17 cy per foot fill. The only volume where this is achieved in Reach 8 is by Alternative 7 which is the SOS Erickson project.	See response to Comments #1 and 10.
31	Citizens' Association of Palm Beach and SOS	Larry Goldberg	You revised your approach to the analysis of the project. You originally considered them as similar and said that they should be evaulated together. Now you say they're not connected. This flies in the face of the scope of the FDEP BMA which is doing inlet-to-inlet analysis and the Woods Hold group which recommends, at a minimum, using groups of reaches for better management. There should be no gaps in contiguous beach dune projects to ensure that there will be continuous shoreline protection. The plan that we have shows 2 beach nourishment projects separated by a dune-only project and that doesn't work, we've seen that before. It just helps the beach areas wash away.	Actions are connected if they automatically trigger other actions that may require an environmental impact statement, if the actions cannot or will not proceed unless other actions are taken previously or simultaneously, or, lastly, if the actions are interdependent parts of a larger action and depend on that larger action for their justification. The two projects evaluated here do not meet these criteria but they are similar in timing, geography and the type of action. The USACE has exercised its discretion to evaluate the two projects in a single EIS, although this is not required.
32	Citizens' Association of Palm Beach and SOS	Larry Goldberg	By excluding the SOS Erickson project and not modelng its effectiveness you did not get a clear picture of how that alternative provides maximum shoreline protection like reduction and overtopping with minimal hardbottom coverage and impact on aquatic resources. A detailed analysis of that project must be included in the final EIS.	See response to Comment #10.
33	SOS	Charles Bonanno	I am opposed to the project in Reach 8 as it stands. The Town needs a 25-year beach and dune nourishment to protect all of the investment and residents.	See response to Comment #1.
34	SOS	Charles Bonanno	I actually believe there are threat to life and limb if we have any kind of major storm and I can almost assure you that we will have a storm and we will have a breach in that area in the next 6 years if that's what it's going to take.	

35	SOS	Charles Bonanno	Is the USACE aware that we did have a blow through in the south area of the island, because we did. It occurred in the 90's and it was 3 or 4 buildings south of Dune Deck. The newspaper attributed it to 3 or 4 rogue waves.	
36	Citizens' Association of Palm Beach and SOS	Heath Chute	We at the Bellaria are also opposed to the project as proposed and believe 25-year storm protection plan must be considered.	See response to Comment #1.
37	Resident	Dr. Sanford Kuvin	They wanted to take about 10 ft of sand away from the inlet to allow larger ships to come through on an emergency basis and that sand which was dredged by Meek, I believe, was supposed to go south to our beaches. But it didn't go south. It went north.	
38	Resident	Dr. Sanford Kuvin	Another point is that the Corps has basically ignored the lifeline to Palm Beach itself namely the sand transfer plant which has been shut down totally for almost a year whereas before it was pumping 220, 000 cy a year, now it's moving virtually nothing and not the Corps and not the County, not the Town, knows exactly why. One prominent theory that's floating about is that the mitigation reef up in Riviera Beach is -- has pods which are drawing sand offshore and, therefore, no sand, or virtually no sand, is coming to the sand transfer plant. In addition to that the sand transfer plant actually broke down and has not been repaired in several months.	
39	Resident	Dr. Sanford Kuvin	I would urge the Corps to -- years ago it had a meeting, about two years ago, and said it's going to be transparent. It hasn't been transparent. It hasn't been proactive, and it hasn't been communicative to the citizens.	
40	Resident	Robert David Allen	The hardbottom transforms to habitat which can't be covered which leads to more adjacent hardbottom being uncovered and so on in infinitum until there is no beach left.	
41	Resident	Robert David Allen	The Town will overspend on a failed project based on inaccurate modeling, substandard sand and lack of structures. The property owners will be no better protected one year after the project than they were before it started and the environmentalists and other interested parties will have reason to sue again to preserve the environment.	As presented in Sub-Appendix G-3 Delft3D model was calibrated based on measured and modeled volumetric changes and showed good agreement. Several alternatives were simulated, including different volumes of sand, fill templates and density, and structures in the Town's portion of the project (e.g. Alternative 7). Regarding the protection one year after the project, compared to the No Action scenario the alternatives simulated retained more sand, specially in the Town's portion.
42	SOS	Eileen Curran	I want to state my objection to another dune project that will use minmal grade sand that is dredged with no beach nourishment in front of all the dunes on Reach 8.	Delete notes.
43	SOS	Eileen Curran	I want to see the United States Army Corps of Engineers recommend in its EIS the first beach nourishment using mined sand that will provide 25-year storm protection for the homeowners of Reach 8.	See response to Comment #1.
44	Citizens' Association of Palm Beach	Lew Crampton	The report does not supply enough clarity on sand quality and grain size and hardbottom mitigation. I mean the report needs to make clear that the BMA which guides what the state will permit and what it won't permit requires sand at a 0.25 grain size. That needs to be made a lot more clear, and the report also needs to be clear about the need for constant monitoring as Connie Gasque said of both the color and the grain size of the sand. So if the borrow site isn't working then we switch to mined sand from Ortona.	Chapter 5 provides the amount of mitigation required based on anticipated impacts from each alternative. A sediment quality assurance/quality control plan will be provided to state and federal agencies during the permitting process, and construction will comply with this plan to ensure the quality of the sand placed on the beach. Appendix I provides the mitigation plan. Table 2-2 was added to clarify the additional sand criteria required by the County. See Sections 2.5, Table 2-1 and Table 2-2 for sediment specifications.

45	Citizens' Association of Palm Beach	Lew Crampton	The other issue is hardbottom mitigation because the report creates confusion on that point especially with respect to the amount of hardbottom mitigation that the Town is required to take on and how much hardbottom mitigation that the County is required to perform. There is a significant difference between the two. Something like 0.5 ac I think for the Town and something like 4.2 ac for the County. That's not clear in the report. At least I didn't get it. At 1 million an acre, 1 million an acre there's a tremendous savings and a tremendous difference for our Town. Moreover, because mitigation costs could be less for us than originally thought, there's a good possibility that we could ask for more sand in Reach 8 than we originally thought we could simply because of the fact that we thought hardbottom mitigation costs would be so high.	Based on the hardbottom analysis, less hardbottom is historically present in the nearshore habitat of the Town of Palm Beach's project area compared to the County. Therefore, less hardbottom is predicted to be impacted thus less mitigation is required. Tables 5-2 and 5-3 provide the impacts and mitigation for each alternative for the Town of Palm Beach and Palm Beach County's individual projects. Although cost is a consideration the USACE will use the overall project purpose to identify alternatives for evaluation in this EIS and to determine if the Applicants' proposed project is the least environmentally damaging practicable alternative (LEDPA) under the Section 404(b)(1) Guidelines.
46	SOS	Madeline Greenberg	...due to the fact that there are errors in the profiles modeling which would include the hardbottom and other aspects, I request that the USACE give a 30-day extension of the public comment period for this EIS.	The DEIS comment period was extended 30 days.
47	SOS	Madeline Greenberg	I object to the fact that the Town of Palm Beach and all the alternatives offered by CP and E for Reach 8 using the lowest standard of dredge sand which apparently the Town of Palm Beach has a lower standard than the rest of Palm Beach County for all beach projects that they use versus using mined sand, Palm Beach County is using only mined sand in their preferred alternative and, therefore, everything being studied for the County is using mined sand. And yet all the alternatives being offered for the Town are being offered with dredged lowest standard. The 0.25 that was referred to is the lowest standard.	See response to Comment #9.
48	SOS	Madeline Greenberg	I object to the fact that we also -- they did not consider, in the Reach 8 part of the project, using groins. They keep referring to, and it's very confusing to the public, that there are groins. Those groins are for South Palm Beach and down for the County portion. The Erickson plan, the SOS plan, had two groins in hotspots and yet that was not given consideration.	See Section 1.1 for a breakdown of the differences between the Town of Palm Beach and the County's preferred projects. The fourth bullet specifies that the County proposes to utilize groins. Regarding the SOS plan, see Comment #10.
49	SOS	Madeline Greenberg	I'm opposed to the project as it stands. Reach 8 needs 25-year storm protection for this project and mined sand and the only alternative submitted to the USACE that offers 25-year storm protection to the upland project shorleine is the Karyn Erickson SOS Beach Nourishment Plan. The SOS plan submitted uses mined sand source, but that's not the way the Army Corps studied it. The object of the SOS plan is, as submitted, was -- had groins and mined sand. Town Council on April of 2004 asked the Army Corps to give "equal consideration" to 25-year storm protection to the project shoreline. The current draft EIS does not give equal consideration to 25-year storm protection as the Town Council agreed to give the SOS Beach Nourishment Plan.	Additional modeling was conducted using grain sizes 0.25 and 0.60 mm for all alternatives in the Town of Palm Beach, including the SOS plan (Alternative #7 in Appendix G), in order to address the range of potential grain sizes that may be utilized and provide flexibility in sand source. Additionally, see response to Comments #1 and 10.
50	SOS	Madeline Greenberg	I object to the fact that the Town is using 15-year storm protection. That's what they applied for and of course 15-year storm protection is the equivalent of protection from one tropical storm. There in the plan that the alternative that the Town provided there is some beach in front of 2 or 3 condos and the rest -- in the middle of no where -- and the rest of them -- the rest of the project is basically dunes. Those 2 or 3 condos that they they're going to get sand that's going to last, they're dreaming. It's going to wash away.	See response Comment #1.
51	SOS	Karyn Erickson	We would request the deadline be extended an additional 30 days.	The DEIS comment period was extended 30 days.
52	SOS	Karyn Erickson	...the plans preferred alternative for the Town section uses a fine offshore sand source, quantities that actually approximate very closely to the losses that occurred in the 2012 Hurricane Sandy event. And it excludes any consideration of groins or structures to slow sand losses.	See response to Comments #9 and 10.
53	SOS	Karyn Erickson	Further, it does not evaluate the differences in sediment erosion rates and longevity nor its impact on the adjacent hardbottom using coarser sand at 0.57 mm or 0.45 mm which is closer to native sand and the 0.25 mm. There's only 1 type of sand that was analyzed.	See response to Comment #49.

54	SOS	Karyn Erickson	The SOS alternative which is described in only the modeling section as Alternative 7 is not evaluated or represented as stated in the main part of the EIS document. This is not the SOS alternative and should be struck in any reference.	Text in Section 2.3.1 was revised to clarify that Alternatives 5 and 6 are not the SOS plan (also referred to as Alternative 7 In Appendix G).
55	SOS	Karyn Erickson	The SOS volume of 99,100 cy was assuming a 3-4 year renourishment with 2 structures towards the south end to slow erosion. It also assumed a coarse sand that was comparable to Ortona or upland mined sand. This is a significant discrepancy by modeling what is referred to as the SOS design using 0.3 mm sand when, in fact, the Town is proposing sand that could be as fine as a mean grain size of 0.25 mm; therefore, the results are not reflective of the Town's proposal. And when we say "mean" that means that 50% of that sand could be 0.1 mm, 0.12 mm, 0.15 mm, substantially finer sand.	See response to Comment #49.
56	SOS	Karyn Erickson	Coastal structures were not assessed or modeled in the Town's portion of the project as recommmend by the SOS plan. Why is that?	The SOS plan, including the two groins, were modeled as Alternative 7 in Appendix G.
57	SOS	Karyn Erickson	The quality of sand, which is a critical component of the SOS alternative, is not considered.	See response to Comment #49.
58	SOS	Karyn Erickson	The SOS alternative is not accurately reflected either in Alternative 6 which is inferred, which is the Town and County's plan with increased sand volumes as the SOS alternative includes a dune feature and protective sand in front of the dune to approximate a 25-year protection. The average sand volume loss for a 25-year storm event, which we modeled for the native beach, we didn't assume that the native beach was 0.3 which is what we assume the modeling from the results we're seeing in the analysis in the EIS assumed the native beach was much finer. For that reason we took the natural beach sand and the models show that you would expect an average of 12 cy of loss per foot per year for a 25-year event, that's the average. The north end is milder to it's a lower volume. The south end, where you're near 135 and 134 monuments, is higher so this is an average. In fact, during Hurricane Sandy the shoreline for this reach eroded 61,000 cy. The design basis in all the modeling performed was based on beach profiles that were 3 years old, they were all pre-Hurricance Sandy profiles so the beach that would be built today wouldn't be as wide with just a dune only as what existed prior to Hurricane Sandy.	See response to Comments #54, 1, and 49.
59	SOS	Karyn Erickson	So you need to know when you're going into a project that you have sufficient sand of the quality you require. Most of these borrow sites we heard time and time again from the Town we meet the DEP's requirements for Corps to represent the borrow site. They meet the minimum requirement. So as an engineer I never go with the minimum requirement.	See response to Comment #9.
60	SOS	Karyn Erickson	The profile data that was the basis for all the modeling was pre-storm November 2011. And it states in the report that while these storms had occurred and likely contributed to background erosion rates there was no major hurricanes that made a direct impact to the project area since the surveys were evaluated, and they implied that the loss and impacts of Hurricane Sandy were minor and represented average conditions. Well, 61,000 cy for that reach of shoreline is not an average condition. And, in fact, they show no fill necessary near the area of the Atriums which had the very worst erosion and has absolutely no dune there now.	The dimensions of the fill templates vary for the range of alternatives evaluated. The volume of fill required to construct the template depends on the condition of the beach. An eroded dry beach condition would require more sand to achieve the template, as compared to a more sand rich condition. The existing conditions (i.e. pre-construction) conditions were evaluated to determine the incremental storm protection benefits attributed to the alternatives. Within the Town's portion of the project, additional modeling was performed. As part of this effort, the existing conditions within the SBEACH model were updated to reflect 2014 beach conditions to evaluate the storm protection afforded without a project.

61	SOS	Karyn Erickson	What we recommend is identifying that we have 3 reaches along -- 3 segments along Reach 8 that represent 3 lines of buildings and that you need to designate a baseline in front of those buidling that would be your protective shoreline beach. That is where seaward at that point you would have sufficient sand to weather between renourishment events and still have some protection that is sufficient to weather a 25-year storm event. That's consistent with the Town's independent consultant recommendation from the Woods Hole Group. They recommend in this area 17 cy of sand per ft of shoreline. The SOS plan recommended 16 cy per ft. We also stated that if any major storm event occurred it would need to compensate for that volume because the modeling was based on the protection and condition from 2011.	See response to Comment #1.
62	SOS	Karyn Erickson	With respect to hardbottom acreages we believe they're biased. They used 2 post-hurricane conditions averaging those acreages to represent the amount of hardbottoms seaward of Reach 8 and the south County. We believe the County also concurs. In 2011 when we evaluated coverages we came up with 2.25 ac of direct impact from the project that was proposed as the SOS plan when the dune still existed prior to the loss of Hurricane Sandy. And I believe that if you average all of those years, as I believe the County is also going to suggest to you in their written statements as we will as well, you'll find there's significantly less impact.	An analysis was conducted to assess removal of the outlier years (those with the highest and lowest acreage of exposed hardbottom) from the 10-year time-average dataset provided in the DEIS. Three datasets were analyzed: 1) all years in the time average (2003-2013); 2) removing one set of outliers - 2006 (highest amount of exposed hardbottom and 2009 (lowest amount of exposed hardbottom); and 3) removing two sets of outliers - 2006 and 2007 (highest exposure) and 2003 and 2009 (lowest exposure). Within the project area (R-129-210 to R-138+551), the results include: 1) 2003-2013 = 17.3 ac of hardbottom 2) removing years 2006 and 2009 = 17.5 ac of hardbottom 3) removing 2006, 2007, 2003 and 2009 = 16.8 ac of hardbottom. By removing one set of outliers, the time-average resulted in 0.2 ac more hardbottom. By removing two sets of outliers, the time-average resulted in 0.5 acre less hardbottom. Therefore, use of all years was deemed warranted by USACE.
63	SOS	Karyn Erickson	In general the draft EIS completely fails to discuss the impact of sand quality on project performance, on hardbottom impacts and costs considering sand quality is a key engineering consideration and biological factor in the design of beach restoration projects.	See response to Comment #49. Hardbottom impacts and mitigation for each alternative and the range of grain sizes modeled are presented in Tables 5-1 through 5-7 for the combined and separated projects. The costs associated with utilizing upland and offshore sand sources are presented in Table 2-11.
64	SOS	Karyn Erickson	While the DEP requires a mean grain size of 0.25 to 0.60 mm their goal isn't for the Town to place the lowest possible quality sand at 0.25 mm but to strive to put coarser cleaner sand. Recognizing the impact of sand size and performance on environmental impacts Palm Beach County has self-imposed specification of 0.3 to 0.7 mm grain size again looking to offshore sand source as a very last result at this point due to the problems inherent with these sites.	See response to Comment #49.
65	SOS	Karyn Erickson	We did a cost comparison of Ortona sand at 0.57 mm recently, very recently, and the unit cost of sand we found for recent projects in these areas is $35 to $40 per cy. The Stuart mine source which is used by Indian River County and many counties where you can specify the amount of shell content and they screen it so you exclude fines, you can specify a minimum of no more than 0.25 or 0.3 mm is $32 to $35 a cy. Keep in mind oil prices are plummeting and so is the cost of trucking sand because as your fuel to fill your car goes down the fuel to fill the tanks to truck sand goes down. Finally, offshore sand, poor quality at average sand size results in a cost of $30 a cy based on the recent Mid-Town Project or $46 a cy if you consider the inconsistency of the sand. So, therefore, in your table where you state that the Town's project will only cost $10 a cy to use offshore sand is a gross inaccuracy. It doesn't include the cost of mobilization, the cost of dredging and hydraulic conveyance, sand placement, grading, site restoration, beach tilling turbidity nor the cost of the original sand source investigation which was over $2 million to permit and design the offshore sand source.	The text in Section 2.6.1 was revised to reflect that the cost associated with mobilization, dredging and hydraulic conveyance would be absorbed by the project already under construction (Phipps or Mid-Town).

66	SOS	Karyn Erickson	I'm going to finally conclude by saying that why would the Town spend two to three years to develop an EIS at a cost that's approaching a half a million dollars for a dune-only project that does not even require a federal permit because you could have placed all the sand above mean high water and avoided this entire process if that is truly what the intent of the project is to provide protection to the property owners that is meaningful.	See response to Comment #1.
67	SOS	Terri Rovelli	I'm just shocked tonight to find out that the USACE could discriminate from 1 town to another, that we're all not treated equally with the same type of sand.	The USACE is evaluating the preferred alternatives as proposed by each applicant.
68	FL Dept. of State, Division of Historical Resources	Robert Bendus	We have reviewed the information contained in the permit application and in the Draft Environmental Impact (DEIS) Southern Palm Beach Island Comprehensive Shoreline Stabilization Project, USACE, December 2014, for the above referenced project. It is the opinion of this office that the proposed beach shoreline stabilization project for Reach 8 will have no effect on historic properties if the following conditions are met: (1) sand is placed on the beach in such a manner that no ground disturbance (such as trenching) is undertaken; (2) no historic structure on the beach, or uplands, are impacted; (3) the buffers as outline in the DEIS are observed during project acitivites; 500 ft buffers for known shipwrecks and 200 ft buffers for offshore anomaly clusters.	
69	FL Dept. of State, Division of Historical Resources	Robert Bendus	We have reviewed the information contained in the permit application and in the Draft Environmental Impact (DEIS) Southern Palm Beach Island Comprehensive Shoreline Stabilization Project, USACE, December 2014, for the above referenced project. It is the opinion of this office that the proposed beach shoreline stabilization project for Palm Beach County will have no effect on historic properties if the following conditions are met: (1) sand and groins are placed/constructed on the beach in such a manner that no ground disturbance (such as trenching) is undertaken; (2) no historic structure on the beach, or uplands, are impacted; (3) the buffers as outline in the DEIS are observed during project acitivites; 500 ft buffers for known shipwrecks and 200 ft buffers for offshore anomaly clusters.	
70	NPS	Joyce Stanley	We have no comments at this time.	
71	EPA	Heinz Mueller	1. Executive Summary (pg xxviii). The Corps discusses dredging offshore borrow areas to be used as beach fill. Are these borrow areas within the jurisdiction of Bureau of Ocean Energy Management (BOEM)? If so, has the Corps coordinated with BOEM? EPA recommends the Corps discuss and document any coordination efforts with BOEM.	All three potential borrow areas are within 3 nautical miles of the Florida Atlantic coast; therefore, they are not within BOEM jurisdiction. See Figure 2-3.
72	EPA	Heinz Mueller	2. Chapter 2-Project Alternatives (pgs 2-1 to 2-38): a. The preferred alternative is stated in the DEIS to have permanent impacts to 4.03 acres of hardbottom resources. According to the public notices that are currently out for public comment, the Palm Beach County portion of the project will have a direct impact on 4.0 acres and the Town of Palm Beach will have a direct impact on 2.99 acres of hardbottom resources. This is an increase of 2.96 acres over what is stated in the DEIS for impacts to the preferred alternative 2. Should this be the case, additional mitigation would be required above what is listed in the DEIS. EPA requests clarification.	In the DEIS, the preferred alternative predicted 4.03 ac of permanent impact to hardbottom. There are seven types of impacts assessed in the DEIS - see Appendix H for a description of these impact types. When the projects were separated, it was anticipated that the Town's project would result in 0.02 ac of permanent impact but the total impact (based on seven impact types, including direct and indirect temporary impacts) was 2.99 ac. The resulting mitigation calculation was weighted based on the type of impact, which were assigned based on temporal and spatial factors. The impacts were not summed in the EIS to avoid confusion such as this.
73	EPA	Heinz Mueller	b. Life expectancy of the preferred alternative is 2 to 4 years for the Town of Palm Beach and 2-3 years for Palm Beach County. The public notice for The Town of Palm Beach states, "This project is a one-time beach nourishment project." The EPA is concerned about the purpose and need of the project since it states this is a one-time project with a life expectancy of only 2 to 4 years with permanent impacts to 2.99 acres of nearshore hardbottom resources. EPA requests clarification and recommends the Corps better describe the project purpose and need in the FEIS.	The USACE is considering authorization under a 10-year permit that would allow for initial project construction and maintenance (renourishment) for up to two renourishments. This language was added to Section 1.1 and 4.1.3.
74	EPA	Heinz Mueller	c. The Preferred Alternative (Alternative 2) will have a direct impact on 4.03 acres and Alterative 3 will have a direct impact on 2.80 acres ofhardbottom. EPA recommends the Corps clarify the difference in permanent impacts when the same amount of fill will be used for each alternative.	The impacts are different between Alternatives 2 and 3 due to the removal of groins from Alternative 3. Clarification was added to Section 2.4.3. Additionally, see Appendix H for details regarding the seven impact types evaluated to provide clarification between direct and permanent impacts.

75	EPA	Heinz Mueller	3. Chapter 4-Environmental Consequences. a. On page 4-46, the Corps discusses using the Uniform Mitigation Assessment Method (UMAM) in determining project impacts to hardbottom resources. EPA recommends the Corps briefly describe UMAM and how it was used in determining impacts. EPA also recommends the Corps better explain how UMAM was used to calculate temporary and secondary impacts.	This section (4.4.2.1) references UMAM only to point the reader to Appendix H, which provides a more detailed description of the seven impact types. UMAM is used to determine mitigation requirements from anticipated impacts. Mitigation is discussed in Chapter 5 and the development of the UMAM evaluation is described in Appendix H. Text was added to Section 4.4 and Appendix H to provide additional detail regarding the ephemeral nature of the hardbottom resources, how impacts were assessed using the results of the numerical modeling study and how the impacts were time-averaged.
76	EPA	Heinz Mueller	b. On page 4-87, the Corps discusses sea-level change, but doesn't approximate the amount of sea level rise predicted and relative impacts to the coastline. EPA also recommends the Corps title this section "Climate Change" rather than "Sea-level Rise" and also expand the discussion in the broader context of "Climate Change". The Corps does briefly mentions climate change, however, EPA recommends the Corps better describe climate change in the terms of increases of frequency and intensity of storm events. The proposed project potentially could also be considered a climate resiliency measure. EPA recommends the Corps more robustly describe climate change to include more detailed description of sea-level rise, better description of impacts of increased frequency and intensity of storm events, etc.	Understood. The USACE included some language describing climate change.
77	EPA	Heinz Mueller	Appendix H (Draft UMAM Analysis). 1. The Part I - Qualitative Description of the UMAM data sheet combined all assessment areas (12.16 acres) on one data sheet. However, the different types of hardbottom impacts (Part II) were placed on separate data sheets. The EPA requests a separate Part I data sheet be developed for each assessment area impacted.	Only one Part I sheet was provided because the hardbottom habitat predicted to be impacted is relatively homogenous. It does not seem necessary to repeat Part I for the impact area when there is no difference between assessment areas. The movement of sand across this habitat is what drives the different levels of impact.
78	EPA	Heinz Mueller	2. PART II data sheet Permanent Impacts (4.03 acres) The Location and Landscape Support scores go from a current condition of 10 to I once the project is completed. The same scenario scores apply to the Community Structure. According to Part I of the UMAM data sheet, the functions listed for this assessment area will be permanently lost once the hardbottom resources are covered with fill material. Therefore, the with project score for these two indicators should be 0.	The USACE determined that the habitat will not be completely lost as it can still function for infauna and organisms that utilize the water column.
79	EPA	Heinz Mueller	Appendix I (Draft Comprehensive Mitigation Plan). The DEIS states monitoring of the mitigation site will be for 3 years. The EPA requests the standard of *5* years used for mitigation projects be applied to the DEIS.	The monitoring of the mitigation reef will be determined based on permit requirements. Three years was chosen based on recent requirements in the region.

80	FDEP	Robert Buda	Scope of Project and Purpose of DEIS: Although the DEIS describes the nourishment interval of the project alternatives and the purpose and need of the groins to extend the life of the project (e.g. beach fill), the DEIS states the alternatives are evaluated as “one-time projects that would be constructed within a six month period with an estimated project life of roughly three years” (Sec. 1.1). As a one-time project, the DEIS as drafted evaluates the expected effects of beach fill spreading onto nearshore hardbottom biological communities caused by the initial beach restoration and groin construction, but not the effects of periodic beach nourishment to maintain the project.	See response to Comment #73. Text was added to Section 5.1.1.3 to clarify this intent. Planning for the Project was formulated to include a 50-year horizon considering sand resource utilization and project life-spans of approximately 3-4 years. Assessment of the mitigation requirements for impacts to nearshore hardbottom was computed over an indefinite (perpetual) horizon, i.e., presuming perpetual impacts to resources. The development of the seven impact types was driven by the numerical modeling approach to determine sand movement and accumulation as well as the ephemeral nature of this particular hardbottom habitat. From aerial analysis, the hardbottom is constantly subject to burial and exposure. It is anticipated that project construction would contribute to the permanent and temporary burial of some hardbottom habitat; however, the UMAM captures these impacts and assumes that mitigation required for the initial placement would not need to be repeated for future renourishments.
81	FDEP	Robert Buda	We understand that the purpose of the DEIS is not to provide complete information needed for the regulatory authorizations of the State of Florida, however, pursuant to section 161.041, F.S., joint coastal permits issued by the department shall be for 15 years or a minimum of at least two beach nourishment maintenance events. Therefore, should a permit application be submitted for this project, the application must provide adequate engineering and environmental data to demonstrate, with reasonable assurance, the expected effects of the project, including periodic beach nourishment, on the beach-dune system and hardbottom biological communities for the life of the permit. Hence, the information contained in the DEIS will not be sufficient for a permit application because it only assesses the effects of the initial beach restoration.	See response to Comments #73 and 80. The Cumulative Impacts Assessment (Appendix J) acknowledges the Applicants' intention to renourish the project area every 3-4 years. Assessment of mitigation requirements for impacts to nearshore hardbottom was computed assuming perpetual impacts to resources. Language from Comment #73 was added to the CIA in Sections 2.2. and 7.0.
82	FDEP	Robert Buda	Project Performance and Downdrift Effects: The DEIS does not provide information on the effect of the project alternatives on alongshore littoral sediment transport and the beaches downdrift of the project location. The public scoping comments included concerns regarding “downdrift impacts” (Sec. 1.7) and, previously, the department provided engineering comments on CPE 2007 that expressed concerns regarding downdrift impacts (see attached). The DEIS includes a Delft3D modeling study used to assess potential sedimentation deposition on the hardbottom habitat, and states that modeling provides engineering data on the project effects on the downdrift beaches. However, the DEIS does not include information on the downdrift effects. The beaches, including the downdrift beaches, should be included in Chapter 3 of the DEIS, as an affected environment, and the environmental consequences of the proposed alternatives should be included in Chapter 4. Furthermore, the DEIS does not provide sufficient information indicating the beach berm width that will be present between beach nourishment events. Without this information, storm protection, wildlife habitat, and recreational benefits cannot be properly assessed by the department. The illustrations provided in Sub-appendix G-3 assist with understanding the nearshore spreading of fill material, but not with the project benefits or downdrift impacts.	Downdrift volume impacts were evaluated by analyzing the volumetric changes within the area extending 4,000 feet south from the south end of the fill templates of each alternative and offshore to the depth of closure (-21.5 feet, NAVD88). The analysis was included in Sub-Appendix G-3.
83	FDEP	Robert Buda	The proposed groin field indicates that there may be adverse effects downdrift due to a disruption of the littoral sand transport system. It is possible that incorporating permeable groins in the middle and on the southern end of the groin field would help littoral sand transport and may decrease the potential adverse effects downdrift of the groin field?	

84	FDEP	Robert Buda	The Department requests plan-view drawings of MHWL contour and cross-sectional plots of the construction fill template, post-construction equilibrated beach profile, and the one-, two-, and three-year post-construction beach profile. Assuming the model provided MLW contours, please translate the model results to an estimate of the upper beach profile and describe the methodology used.	Plan view drawings were developed and are presented in Chapter 2 after description of each alternative. Cross-section (profiles) plots were also developed but are presented in Sub-Appendix G-5.
85	FDEP	Robert Buda	Project Performance and Storm Protection Benefits: In comments provided on CPE 2007, the engineering staff requested additional information to document the benefits of the engineering alternatives in terms of storm damage reduction and enhancement of marine turtle nesting and hatchling success (see attached memo dated February 15, 2008). The draft DEIS uses the SBEACH storm erosion model and the IH2VOF wave overtopping model to evaluate the level of storm protection provided by the existing conditions and the storm protection benefits of two of the proposed beach fill alternatives.	Impacts to nesting habitat (positive and negative) from each alternative are described in Chapter 4, Section 4.3.
86	FDEP	Robert Buda	The DEIS Appendix G provides information on model study and results. The construction fill template of the project alternatives was used in the model for pre-storm conditions (Table 4-3, Sub-appendix G-1). Using the construction fill template in the analysis leads to results that overestimate the storm protection provided by the alternatives. As indicated in the DEIS, the fill material will immediately begin to spread cross-shore and alongshore. In order to reasonably estimate storm protection, the department requests the models use the cross-sectional plots of the construction fill template, post-construction equilibrated beach profile, and the one-, two-, and three-year post-construction beach profile.	The construction fill template of project alternatives was used in the model for pre-storm conditions in addition model simulations were conducted under existing conditions. Storm protection simulation results from post-construction equilibrated beach profile, and the one-, two-, and three-year post-construction beach profile will fall between the existing conditions and the construction fill template model simualtion results.
87	FDEP	Robert Buda	The narrative of primary findings in Appendix G, Section 3.1, describes the storm protection afforded by the existing conditions, but does not comment on the storm protection benefits of the two beach fill alternatives. Please include a narrative of the findings for the beach fill alternatives. Illustrate the narrative with cross-shore plots at each reference monument that depict the 15-year storm erosion impacts to the existing beach condition and the two beach fill alternatives. Provide these cross-shore plots for the 25-year storm as well since the narrative states these two return interval storms both result in property damage under existing conditions. Please include the pre-storm beach profile used in the model on the cross-shore plots for the two beach fill alternatives and explain in the narrative the selection of the pre-storm beach profile.	Details of the modeling study are included in Sub-Appendix G-1 and its attachments. Cross-sectional plots are included in Attachment C of Sub-Appendix G-1.
88	FDEP	Robert Buda	Beach-Compatible Sediment: The sand specification used within the modeling study does not accurately represent the possible grain sizes that may be encountered during dredging or that may be obtained from upland mines. The BMA sand specification ranges from 0.25 to 0.60 mm, and all analyses should be consistent with both the specifications for this project and the BMA. The mean grain size of the dredged and stockpiled material indicates the sand to be placed will be finer than indicated in the models run, while the mean grain size of the upland material indicates the sand to be placed will be coarser than indicated in the models run. These differences may change the predicted project performance and lifetime.	See response to Comment #49.
89	FDEP	Robert Buda	The schedule for dredging and stockpiling of material for use by multiple projects may be difficult to coordinate. Will additional material for this project be dredged and stockpiled each time offshore borrow areas are dredged for Phipps or Mid-Town? How will emergency needs (i.e., storm recovery) be addressed if both Phipps and Mid-Town, as well as this project, are in need of the stockpiled sand? Additionally, what volume is able to be stockpiled for these projects and what would be the combined effect on the borrow areas?	Yes, the Town of Palm Beach plans to dredge excess sand during Phipps or Mid-Town construction and transport it by truck haul to the project area. An active stockpile would be utilized where the sand is immediately trucked to the Project Area instead of remaining in a stockpile. The Town has constructed dunes in Reach 8 using this method in the past. Emergency needs are not addressed in the EIS.
90	FDEP	Robert Buda	The technical specification document includes different sand specifications than the BMA. As the DEIS says the project will be compliant with both documents, please note that the more strict of the two parameters will apply.	Further clarification was added regarding which sediment specifications the Town of Palm Beach and the County are required to adhere to in Sections 1.4 and 2.5.

91	FDEP	Robert Buda	Hardbottom Impacts: At this time, BMES does not agree to accept the proposed time-averaged estimate of hardbottom impact acres. The department typically considers current conditions of the assessment area and uses historical information to determine the ephemeral / persistent nature of hardbottom resources. BMES requests additional information on the methods that were used to delineate hardbottom for impact acreage estimations, including how the position of the seaward edges of hardbottom areas were determined. Please recalculate the acreage of hardbottom within the influence of the project prior to permitting.	See Section 4.4 for determination to use time-average instead of current conditions. The hardbottom delineation data used in this analysis was downloaded from the FDEP's BMA website, with the exception of 2013 data which was delineated by CB&I for this EIS (see Section 3.5).
92	FDEP	Robert Buda	The DEIS considered multiple categories of potential impacts to nearshore hardbottom, including direct, secondary, temporary, and permanent impacts. During the department's permitting process, all resources within the equilibrium toe of fill (ETOF) will be considered to be directly and permanently impacted because the fill template will be maintained over time. Resources located within the predicted ETOF will be subject to continual impacts from subsequent nourishment events; therefore, please revise the DEIS to indicate that all resources within the predicted ETOF will be directly and permanently impacted by the project.	See response to Comments #81 and 91.
93	FDEP	Robert Buda	If the project is to be permitted in accordance with the BMA, the ratio of hardbottom impacts to mitigation reef creation should be between 1:1 and 1:1.5. Please recalculate the acreage of mitigation that will be built to offset direct impacts (per comments above).	At this time, it is not the intention of either Applicant to include their respective projects in the BMA.
94	FDEP	Robert Buda	Biological Monitoring Plan: The department requests a biological monitoring plan to evaluate potential unpermitted impacts to resources located beyond the predicted ETOF, resources adjacent to any new borrow areas and resources near the proposed stockpile areas. Department staff will be glad to assist in the creation of a biological monitoring plan that will provide reasonable assurance that all impacts will be documented, if they occur. Alternatively, if this project is permitted within the BMA, the cell-wide monitoring plan will be amended to include regulatory monitoring requirements. If monitoring confirms that unpermitted impacts to resources occurred, then additional mitigation may be required by the department.	A biological monitoring plan will be provided through the permitting process.
95	FDEP	Robert Buda	Borrow Area Biological Monitoring: The DEIS did not consider potential impacts to biological resources located near new borrow areas, which could be impacted during the removal of materials that are to be placed on the beach. If borrow areas have not been permitted or already approved in the BMA, the department requests that consideration of potential impacts to resources near borrow areas be included in the final EIS, unless it is known that no resources surround these borrow areas. Please note, if resources are located within 1,000 feet of the proposed borrow areas, then these resources will need to be monitored to document any potential project-related impacts.	The borrow areas described in the EIS are approved in the BMA.
96	Citizens' Association of Palm Beach and SOS	Larry Goldberg	For your overall project purpose you chose to use a 15-year interval as the criteria for evaluating upland infrastructure protection. This is not consistent with input received from the Woods Hole Group (WHG) which said in its report to the Town of Palm Beach that a 25-year interval would be appropriate for a beach nourishment project and a 15-year interval for sacrificial dunes (both with advance nourishment to achieve design life). The April 29, 2014 letter to you from Palm Beach Mayor Gail Coniglio also asks for 25-year storm protection "to maximize the opportunity for the Town to provide storm protection in Reach 8". The overall project purpose should be restated to say it is to restore the beach and protect upland infrastructure from a 25-year interval storm.	See response to Comment #1.

97	Citizens' Association of Palm Beach and SOS	Larry Goldberg	You have revised your approach to the analysis of the proposed projects. You initially considered them as “similar” and that they should be evaluated together. You now say they are not “connected”. This flies in the face of the scope of the FDEP BMA document which calls for inlet to inlet project impact evaluation and the WHG recommendations which support at a minimum evaluating projects in groups of reaches for better management.	See response to Comment #31.
98	Citizens' Association of Palm Beach and SOS	Larry Goldberg	There should be no gaps in contiguous beach/dune projects to insure that there will be continuous shoreline protection. Just look at the plan view (figure 2-2 on p. 2-19) which shows unacceptable short stretches of beach nourishment separated by a dune only portion. The protection of this plan vs. a continuous beach nourishment project like the SOS (Erickson) project should be evaluated to determine the best solution. Dr. Robert Dean , a coastal expert , (as noted on page 74 of Judge Meale’s ruling on the original Reach 8 permit) said “a beach nourishment project of less than one mile is not effective”. As you have said: “The goals and objectives for the shoreline protection projects are to provide more sand into the littoral system and create a higher profile beach and dune that will buffer the effects of storm surge and wave action, and protect upland infrastructure. The Project will minimize future adverse storm induced effects by nourishing the beach to replace the sand that has been lost due to erosion”. Plans which include a dune only segment will not meet those targets.	See responses to Comments #1 and 10.
99	Citizens' Association of Palm Beach and SOS	Larry Goldberg	By excluding the recommended SOS/Erickson project which uses upland mined sand - with and without groins - and not modeling its effectiveness you do not get a clear picture of how that alternative provides maximum continuous shoreline protection (reduction in overtopping) with minimal hard-bottom coverage and impact on aquatic resources. A detailed analysis of that project must be included in the final EIS. This should help clarify the statement made in the DEIS that the SOS (Erickson) plan (of 166,800 cy) results in 12.69 acres of permanent and 5.85 acres of other impact. The communication you received on Aug. 6, 2013 indicated that plan “would impact less than one acre of primarily low-relief hardbottom”.	See response to Comments #10 and 49.
100	Citizens' Association of Palm Beach and SOS	Larry Goldberg	Also, as a last comment, the net change in hard bottom described in sub-appendix G-3 regarding the DELFT3D modeling report does not seem to match the data shown in Tables 5.1, 5.2, and 5.3 . It would help to explain the relationship of this information, i.e. net hardbottom model results vs. required mitigation for each alternative.	Clarification added to text in Section 5.1.1.1.

101	Town of Manalapan	Chauncey O Johnstone	In 2013 our Mayor, David Cheifetz, appointed me to Chair a Beach Committee charged with determining if the sand transfer operation located at the Boynton Inlet had any effect on the loss of sand along the Manalapan beaches. It was difficult to determine if this in fact was happening, however our investigation took us north of Manalapan, Including Lantana, South Palm Beach, Lake Worth and eventually into the area of Phipps Park in Palm Beach. It was obvious that there was a loss of beaches.	
102	Town of Manalapan	Chauncey O Johnstone	Concentrating on Manalapan, Jennifer M. Peterson PHD, Environmental Consultant, Beaches, Mines and ERP Support Program, Division of Water Resource Management, Florida Department of Environmental Protection, at our request, visited Manalapan in 2013. The focus of that visit was to determine to what extent old underwater pipes and related supports in the debris field may be a danger to bathers. The findings of her visit, with her team, are outlined in the attached document. We believe that in some areas along the public portions of the beaches, the near shore reef and or debris, has an impact on the loss of sand. The area beyond the subject reef is deep for about 25 to 50 yards, when it then becomes a sand bar where one can stand. The near shore reef is in part the remains of road debris that was dumped in the water after A1A was destroyed in a storm in the 1940's.	
103	Town of Manalapan	Chauncey O Johnstone	We support any and all efforts to reclaim the beaches as they are one of the many attributes that bring tourists and new residents to Florida. Manalapan appears to be in the "Reach 8" section of the program.	The Town of Palm Beach is in Reach 8. The Towns of South Palm Beach and Lantana are in Reach 9. The northern end of Manalapan is in Reach 10.
104	NMFS	Virginia M. Fay / Jocelyn Karazsia	The initial determination by the Jacksonville District in each public notice is the proposed filling of 12.16 acres of nearshore hardbottom, which is designated a Habitat Area of Particular Concern (HAPC) by the South Atlantic Fishery Management Council (SAFMC), would not have an adverse impact on EFH or federally managed fishery species. The Draft EIS does not include an EFH determination. The Draft EFH assessment says the Project may adversely impact hardbottom and softbottom, and will temporarily impact the marine water column for various life stages of managed species. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments and recommendations are made pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).	The Applicants' Preferred Alternative may result in permanent and temporary impacts to (not filling of) a total of 12.16 ac of nearshore hardbottom. See Appendix H for clarification of the seven types of impacts evaluated.
105	NMFS	Virginia M. Fay / Jocelyn Karazsia	1 The Draft EFH assessment states the Project may result in permanent impacts to 4.03 acres of hardbottom from the construction toe-of-fill and an additional 8.13 acres of impact from the equilibrium toe-of-fill, 12.16 total acres. The separate public notices for the two Project segments list 2.99 acres and 7.14 acres, which sums to 10.13 acres. Jacksonville District consultants have explained this difference results from the models used. The Draft EIS (page 4-92) notes the total impact acreage is 12.18 acres; it is not clear why this number is 0.02 acres more than the EFH assessment.	12.16 acres was the correct impact amount (12.18 ac was a typo); however, this acreage has been updated to include the 2014 hardbottom delineation dataset and the additional modeling results for a range of grain sizes throughout the document.
106	NMFS	Virginia M. Fay / Jocelyn Karazsia	*letter provides project history and NMFS involvment regarding previous public notices for Reach 8	

107	NMFS	Virginia M. Fay / Jocelyn Karazsia	Mandatory Components of an EFH Assessment, 50 CFR 600.920(e)(3): (1) Description of the proposed action: NMFS requests the Final EIS and EFH assessment provide more explanation on the rationale behind the proposed design. The apparent rationale is to place a minimal amount of fill below the MHWL, thereby resulting in less impact to hardbottom from the construction toe-of-fill (TOF). Over time, fill placed landward of the MHWL is expected to move to the subtidal beach resulting in an equilibrium-toe-of-fill (ETOF) with greater impacts than those from the construction TOF. While NMFS believes this approach may minimize hardbottom impacts, there are two concerns. First, the Draft EIS and EFH assessment imply impacts from the ETOF are less severe than those from the construction TOF. This issue should be addressed directly and explained. Second, the hardbottom acreage in the 2011 public notice for Reach 8 North and Reach 8 South lists much lower hardbottom impact acreage for Reach 8 South than currently proposed for the Town of Palm Beach segment of the Project. While the cause of this difference likely is the better quality maps used for the Draft EIS and EFH assessment than used several years ago for the 2011 public notice, this difference also complicates evaluation of the effectiveness of the construction strategy for minimizing hardbottom impacts. The Final EIS and EFH assessment would benefit from more discussion of this point.	The proposed design was developed to meet the Applicants' Purpose and Need while minimizing impacts to resources. To address the first concern, please note that the ETOF impacts are assessed as a conservative measure to supplement the impacts determined through numerical modeling. Essentially, the results from the modeling could serve to provide the impacts to hardbottom without the additional ETOF analysis. Development of this approach is described in detail in Appendix H. Also, see response to Comment #109. The impacts determined for this project utilized a time-average approach in order to account for the natural variability in hardbottom exposure and burial over time in the study area. The impacts assessed for the Reach 8 North and South projects utilized a single aerial image. This likely accounts for the difference. See Chapter 4, Section 4.4 for the decision to use the time-average approach and details on its application.
108	NMFS	Virginia M. Fay / Jocelyn Karazsia	NMFS requests the Final EIS and EFH assessment identify the sand source for the Town of Palm Beach segment and analyze the effects of dredging and transporting the material to the beach, including any pipeline corridors. The Draft EIS and EFH assessment state a borrow area permitted under SAJ-2000-00380 (Phipps) or SAJ-1995-03779 (Mid-Town) may be used or a new, unspecified borrow area may be used.	The effects of dredging and transporting sand to the beach are analyzed under the Mid-Town and Phipps project permits. The borrow areas identified in the DEIS and EFH are those that are currently permitted under the BMA. Description of the Town's portion of the project under Section 1.4 states, "...or any offshore sand source that is consistent with the BMA cell-wide sediment quality specifications." in order to maintain flexibility should another borrow area be identified in the future that meets FDEP's sediment criteria.
109	NMFS	Virginia M. Fay / Jocelyn Karazsia	(2) Analysis of the effects, including cumulative effects, of the action on EFH, and managed species by life history stage: NMFS requests the Final EIS and EFH assessment more clearly explain the timing and severity of the impacts. National Environmental Policy Act (NEPA) regulation §1508.21 specifies impacts can be (1) direct, (2) indirect, or (3) cumulative. However, the Draft EIS and Draft EFH assessment refer to impacts as direct, indirect, cumulative, and secondary (emphasis added). The Jacksonville District appears to use the term secondary to refer to indirect impacts it judges to be less severe. NMFS requests the Final EIS and EFH assessment define “secondary impact” and relate that definition to those in the NEPA regulations for direct and indirect impacts. If the NEPA categories are sufficient for the Project, NMFS recommends the Final EIS and EFH assessment not use the term “secondary impacts.”	During development of the impact types assessed in the EIS, the USACE decided to include impacts that fell within the ETOF (but were not captured in the numerical modeling results) in order to conservatively estimate all potential impacts. The impacts within the ETOF were labeled "secondary" impacts but have since been renamed "Indirect Temporary (ETOF)" impacts to align with NEPA regulation. See Appendix H for details on the timing and severity of the impacts.
110	NMFS	Virginia M. Fay / Jocelyn Karazsia	NMFS requests the Final EIS and EFH assessment provide the evidence relied on to conclude in Section 4.1.4 (page 40) that placing approximately 3.8 million cubic yards of material along the Southern Palm Beach Island shoreline over the next 50 years is not anticipated to result in any measurable cumulative losses of ecological functions and services, or cumulative impacts on EFH or managed species. No supporting evidence for this conclusion is presented in the Draft EIS and EFH assessment.	The anticipated volume of sand placed in the Project Area over the next 50 years is 2.4 million cy. The text was revised to indicate that past, present and future projects on Palm Beach Island may contribute to cumulative impact to EFH.
111	NMFS	Virginia M. Fay / Jocelyn Karazsia	(3) The federal agency’s views regarding the effects of the action on EFH: As noted earlier, the Jacksonville District’s initial determination is neither Project segment individually nor cumulatively would have an adverse impact on EFH or federally managed fishery species. It is not clear how the District arrived at this determination, in particular for the Town of Palm Beach component, given the consultation history and the contrary determination made in the January 31, 2011, public notice and the Draft EFH assessment. NMFS requests the Final EIS and EFH assessment provide a more clear rationale for the determinations made.	See response to Comment #110.

112	NMFS	Virginia M. Fay / Jocelyn Karazsia	(4) Proposed mitigation: Appendix H of the Draft EIS provides draft Uniform Mitigation Assessment Method (UMAM) worksheets showing 6.39 acres of mitigation are needed to offset 12.16 acres of intertidal and subtidal nearshore hardbottom. The worksheets use seven categories of impact based on the timing and duration of burial or sedimentation: (1) permanent, (2) direct temporary (<1 year), (3) direct temporary (>1 year), (4) direct temporary (>2 years), (5) indirect temporary (1 year), (6) indirect temporary (2 years), and (7) secondary. This approach differs from how UMAM is commonly done for beach nourishment projects in Florida, which is to use a single assessment area based on the ETOF and to consider those impacts as permanent so future nourishments of the same beach can proceed without providing additional mitigation. While NMFS is not opposed to a new approach for determining mitigation requirements, the approach outlined in the Draft EIS would not fully offset impacts from the Project (i.e., less mitigation is provided per impact acre relative to other projects) and would not allow future nourishments to occur without providing additional mitigation. NMFS requests the Final EIS and EFH assessment provide a more clear explanation of the mitigation strategy and how it relates to future nourishments of these Project segments.	See response to Comments #73, 80 and 81.
113	NMFS	Virginia M. Fay / Jocelyn Karazsia	Additional Information for an EFH Assessment, 50 CFR 600.920(e)(4): (1) Results of an on-site inspection to evaluate the habitat and the site-specific effects of the project: The draft EFH assessment lists several habitat mapping and characterization surveys conducted in the Project area during the last ten years. The overall benthic community (intertidal and nearshore subtidal hardbottom) is dominated by turf algae, sediment, bare hard substrate and macroalgae. Common macroalgae genera include Padina, Dictyota, Hypnea, Dasycladus, Laurencia, and Halimeda. Wormrock (Phragmatopoma caudata) also occurred along with tunicates, sponges, bryozoans, zoanthids, scleractinian (stony) corals, and octocorals. The scleractinian species most frequently observed were Siderastrea spp. and Solenastrea bournoni. The most common octocorals observed were from the genus Pseudopterogorgia, with colonies of Pterogorgia, Muricea, and Eunicea also documented. While this information is sufficient to support general descriptions of EFH, it may not be sufficiently quantitative to also be used as a baseline assessment for the biological monitoring. The Draft EIS Section 5.2.3 (page 5-17) acknowledges a pre-construction biological assessment of nearshore hardbottom habitat will be needed to document the existing conditions of the hardbottom resources and provide a baseline for post-construction comparisons. NMFS requests an opportunity to review the pre- and post-construction monitoring plans before a permit is issued.	
114	NMFS	Virginia M. Fay / Jocelyn Karazsia	(2-3) Views of recognized experts on the habitat or species that may be affected and review of pertinent literature and related information: Section 4.1.3 (page 39) states “surveys of nearshore fish populations conducted in Florida before and after beach nourishment showed no evidence of any adverse impacts on the abundance and composition of the fishes sampled (NRC 1995).” This section would benefit from including Lindeman and Snyder (1999)[2], which shows beach nourishment significantly lowers fish abundances and species diversity in Palm Beach County; drawing more from the fish sections of FDEP’s review of the ecological functions of nearshore hardbottom habitat[3]; and noting beach nourishment can affect fishery resources by covering hardbottom habitat and by creating a chronic source of suspended sediments, which can interfere with foraging by fish and shrimp and abrade their gills and other soft tissues. (2) Lindeman, K.C., and D.B. Snyder. 1999. Nearshore hardbottom fishes of southeast Florida and effects of habitat burial by dredging. Fishery Bulletin 97:508-525. (3) CSA International, Inc. 2009. Ecological functions of nearshore hardbottom habitat in east Florida: A literature synthesis. Prepared for the Florida Department of Environmental Protection Bureau of Beaches and Coastal Systems, Tallahassee, FL. 198 pp + apps.	Revised text in Sections 4.6 and Appendix F EFH Assessment, Section 4.1.3 to include recommended literature.

115	NMFS	Virginia M. Fay / Jocelyn Karazsia	The assessment of impacts to the macrobenthic populations at the beach fill and borrow areas would benefit from including: (a) Manning, L., Peterson, C., and Bishop, M. 2014. Dominant macrobenthic populations experience sustained impacts from annual disposal of fine sediments on sandy beaches. Marine Ecology Progress Series 508:1-15. (b) Wanless, H. and Maier, K. 2007. An evaluation of beach renourishment sands adjacent to reefal settings, Southeast Florida. Southeastern Geology 45:25-42. (c) Jordan, L., Banks, K., Fisher, L., Walker, B., and Gilliam, D. 2010. Elevated sedimentation on coral reefs adjacent to a beach renourishment project. Marine Pollution Bulletin 60:261-271.	Revised text in Sections 3.6.1, 4.6 and Appendix F EFH Assessment - Section 4.1.2 to include recommended literature.
116	NMFS	Virginia M. Fay / Jocelyn Karazsia	(4) An analysis of alternatives to the proposed action: The range of alternatives provided in the Draft EIS is sufficient for the EFH assessment. The Draft EIS evaluates six alternatives: (1) the No Action (Status Quo) Alternative; (2) the Applicants' Preferred Alternative - Beach Fill and Dune Restoration with Shoreline Protection Structures; (3) the Applicants' Preferred Alternative without Shoreline Protection Structures, (4) The Town of Palm Beach Preferred Project and County Increased Sand Volume without Shoreline Protection Structures Project; (5) The Town of Palm Beach Increased Sand Volume and County Preferred Project; and (6) The Town of Palm Beach Increased Sand Volume and County Increased Sand Volume without Shoreline Protection Structures Project.	
117	NMFS	Virginia M. Fay / Jocelyn Karazsia	Recommendations for the Town of Palm Beach segment of the Project, SAJ-2005-07908: For the Town of Palm Beach segment of the Project, NMFS affirms its March 2011 determinations that the proposed beach fill would adversely impact EFH and result in substantial impacts to ARNI, in accordance with Part IV, Section 3(a) and Section 3(b) of the current MOA between the Departments of Commerce and the Army, and that authorization of the proposed action would impact EFH. Accordingly, NMFS continues to recommend this segment of the Project not be authorized. The March 2011 letters also recommended a path forward for addressing the stated concerns, and NMFS affirms its commitment to that path and desire to resolve the impasse informally and at the field level.	See response to Comment #110.
118	NMFS	Virginia M. Fay / Jocelyn Karazsia	Recommendations for the Palm Beach County segment of the Project, SAJ-2008-04086: NMFS concludes the groin construction and beach fill proposed for the Palm Beach County segment of the Project would adversely impact EFH. Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations when an activity is expected to adversely impact EFH. In consideration of this requirement, NMFS provides the following:	
119	NMFS	Virginia M. Fay / Jocelyn Karazsia	EFH Conservation Recommendations: 1. NMFS recommends the applicant provide an updated habitat map and characterization of hardbottom habitat within the Palm Beach County segment of the Project. Methods for mapping and characterizing the hardbottom should be coordinated with NMFS to ensure the survey will be sufficient to determine the amount of worm reef in the project area and to locate all coral suitable for relocation (suitability would be based on species and size class).	
120	NMFS	Virginia M. Fay / Jocelyn Karazsia	2. The permit include a coral relocation plan describing relocation of scleractinian corals greater than or equal to 10 centimeters in diameter and octocorals from the genera Gorgonia, Eunicea, Plexaura, Plexaurella, Muricea, and Pterogorgia. NMFS recommends the plan be based on the coral species and size classes identified in updated habitat map (see EFH conservation recommendation 1), identify the mitigation reefs as the relocation site, and provide no less than two years of monitoring with performance standards of no less than 85% successful re-attachment and positive linear extension after two years.	
121	NMFS	Virginia M. Fay / Jocelyn Karazsia	3. The permit includes a biological monitoring plan describing how actual impacts will be gauged relative to those predicted in the EFH assessment. NMFS recommends the plan include triggers for additional compensatory mitigation when appropriate.	

122	NMFS	Virginia M. Fay / Jocelyn Karazsia	4. The permit includes a mitigation plan fully offsetting both temporary and permanent losses of EFH. NMFS recommends the plan provide updated functional assessment scores for the hardbottom impacts that reflect input from NMFS and FDEP and a mitigation monitoring plan that contains clear performance criteria.	
123	NMFS	Virginia M. Fay / Jocelyn Karazsia	5. For stretches of the beach where dune fill only is proposed, the permit includes a requirement for clearly marking the annual highest tide line in the field and for having an independent contractor on-site to verify no material is placed waterward of the annual highest tide line.	
124	NMFS	Virginia M. Fay / Jocelyn Karazsia	Section 305(b)(4)(B) of the Magnuson-Stevens Act and implementing regulation at 50 CFR Section 600.920(k) require the Jacksonville District to provide a written response to this letter within 30 days of its receipt. If it is not possible to provide a substantive response within 30 days, in accordance with the "findings" with the Jacksonville District, an interim response should be provided to NMFS. A detailed response then must be provided prior to final approval of the action. The detailed response must include a description of measures proposed by the Jacksonville District to avoid, mitigate, or offset the adverse impacts of the activity. If the response is inconsistent with the EFH conservation recommendations, the Jacksonville District must provide a substantive discussion justifying the reasons for not following the recommendations.	
125	NMFS	Virginia M. Fay / Jocelyn Karazsia	The Draft EIS states loggerhead sea turtles (Caretta caretta) and their designated critical habitat occur within the Project area. In addition, the Draft EIS states hawksbill sea turtles (Erettnochelvs imbricate), Kemp's Ridley sea turtles (Lepidochelys kempii), green sea turtles (Chelonia mydas), and leatherback sea turtles (Dermochelys coriacea) may also occur in the Project vicinity. Impacts to endangered or threated species and their critical habitat may require consultation with the NMFS Protected Resources Division. If the Jacksonville District determines the permitted action may affect a listed species, the District should contact the NMFS Southeast Region, Protected Resources Division at the letterhead address.	
126	Sierra Club	Drew Martin	I am concerned about the quality of sand being proposed for the Town of Palm Beach South of the Lake Worth Pier. The town is proposing to use dredged sand. I am concerned about the quality of the sand being proposed by the town will hold sediments that will cause turbidity in the water and that the size of the sand particles will not be large enough to stick to the existing sand. The town has rejected using mined sand which would provide a better sand source. Other projects have failed to do an adequate job of protecting the shoreline because of poor quality sand. I am also concerned that the dredged sand will not provide the proper beach quality for sea turtles. Dredged sand has in the past created a hard surface that sea turtles could not dig through to place their nests. Further, it has created impediments to sea turtles by leaving large steps in the beach that sea turtles had trouble climbing over. I saw this when I visited the beach after a previous project using dredged sand. In previous projects dredges and their tow lines caused reef damage when they dragged across reefs. Dredges have sucked up species and often leave turbidity in the water. I oppose dredging of sand off the ocean bottom for this reason. Dredging areas also are not providing the best quality sand. Much of the best sand has already been taken leaving on poor quality sand.	See response to Comments #9 and 108.
127	Palm Beach County	Kim Miranda	I have also attached the County's most recent typical cross-section drawing for our mitigation reefs. Can you please incorporate into the DEIS?	The cross-section drawing was added to Appendix I-2.
128	Palm Beach County	Kim Miranda	In addition to the comments provided, three documents have been enclosed for incorporation into the FEIS. These documents include a (1) Sub-bottom Profile Investigation & Hydrographic Survey (Rl34-Rl39),	The Sub-bottom Profile Investigation & Hydrographic Survey was added to Sub-Appendix I-2.
129	Palm Beach County	Kim Miranda	(2) Palm Beach County UMAM analysis, and	The USACE acknowledges the County's UMAM but chooses to utilize the one developed for the EIS.
130	Palm Beach County	Kim Miranda	(3) preliminary 2014 sea turtle nesting data for the County's study area.	Section 3.4 was updated with 2014 sea turtle data.

131	Palm Beach County	Kim Miranda	The County does not agree with including years 2006 and 2007 in the 10-year time average as the high rate of exposure of the hardbottom resources is directly related to hurricane impacts. In 2004, Hurricanes Frances (Category 2) and Jeanne (Category 3) both made landfall just north of Palm Beach County within the same month of September. The following year, Hurricane Wilma, a Category 3 storm, impacted the already battered beaches of Palm Beach County. Natural recovery of the beaches was slowed by the numerous tropical and nor'easter storm events that followed. In 2007, storm events impacted the County including Tropical Storm Noel and Subtropical Storm Andrea, which required an emergency declaration due to the extent of the erosion. Delineation of the hardbottom (R127 – R141+586) included within the DEIS (Table 3-3 – Page 3-10) demonstrates that years 2006 and 2007 had an exceptionally high rate of exposure. In 2006, 51.20 acres of ephemeral nearshore hardbottom was exposed while 41.69 acres were exposed in 2007. This high rate of hardbottom exposure is due to a series of storms and is not necessarily a true representation of typical hardbottom exposure.	See response to Comment #62.
132	Palm Beach County	Kim Miranda	Abstract: The County is requesting that the project's southern boundary end at ~R138+400' or the southern boundary of the Eau Palm Beach Resort Property located in the Town of Manalapan. As a result in this change, the total project length and County segment length require revision.	The southern boundary will remain as presented in the DEIS (R-138+551) as design and modeling were based on this project limit.
133	Palm Beach County	Kim Miranda	Executive Summary: Page xxviii: B. Need for Proposed Action: Edit (First sentence): Change to the following: The goals and objectives for the shoreline protection projects are to provide more sand into the littoral system and create a **stable** beach and dune that will buffer the effects of storm surge and wave action, **provide wildlife habitat, allow for recreational use** and protect upland infrastructure.	Revised Executive Summary and Section 1.4 for consistency.
134	Palm Beach County	Kim Miranda	Table ES-1: Edit: Alternative 2: This alternative lists secondary impacts as 8.13 acres while elsewhere in the DEIS secondary impacts are listed as 8.14.	8.13 acres was the correct impact amount (8.14 ac was a typo); however, this acreage has been updated to include the 2014 hardbottom delineation dataset and the additional modeling results for a range of grain sizes throughout the document.
135	Palm Beach County	Kim Miranda	Page xxxvii: I. Areas of Potential Controversy: The DEIS requests input regarding the potential of nearshore hardbottom exposure as a result of the construction of the groins "or other aspects of the Project." The County contends that any increase in nearshore hardbottom exposure or frequency within or adjacent to the project area should offset some of the impacts associated with the changes in duration or frequency of burial.	
136	Palm Beach County	Kim Miranda	Chapter 1 (Purpose Of & Need For Action): Page 1-2: Comment (Last bullet): The County has always recognized the requirement of maintenance and will request DA authorization exceeding the five-year duration.	See response to Comment #73.
137	Palm Beach County	Kim Miranda	Page 1-3: Comment: The DEIS states in the second paragraph that the "proposed projects are one-time projects" however the County's project requires maintenance approximately every three years. Initial placement CY should be presented as well as maintenance CY.	See response to Comment #73. Initial fill placement of 75k cy is based on 2008 conditions. This will be updated prior to project construction and the permitted template will be constructed. Likewise, the volume required to fill this template during renourishment will be dependent on the conditions of the beach prior to construction.
138	Palm Beach County	Kim Miranda	Page 1-8: Comment: The DEIS states in the first paragraph "The County withdrew its application for breakwaters after their consideration of public comments and the anticipated adverse effects on the shoreline." The County never submitted an application for the breakwater project for this project area. Please revise the text. Since 2007, Palm Beach County has completed several engineering studies that have evaluated various long term erosion control alternatives (no action, beach nourishment, groins & breakwaters) for the County's project area.	Text was revised in Section 1.1.4 that this file number was generated by USACE based on discussions about producing and EIS based on projects analyzed in a 2007 feasibility study. The same file number was used for the County's portion of this project due to the same project location.
139	Palm Beach County	Kim Miranda	Page 1-17: Edit (Second paragraph): Change second sentence to the following "The project need is to provide storm protection for upland infrastructure, property, and wildlife nesting habitat, as well as to **maintain** recreational use in the County portion of the Project Area shoreline."	The Applicants' Project Purpose and Need Statement was revised to reflect the specific wording from each applicant in Section 1.5.1.
140	Palm Beach County	Kim Miranda	Chapter 2 (Project Alternatives): Page 2-8: 2.3. Results of Preliminary Screening of Alternatives: Comment: Use of Non-Domestic Sand Source is not discussed further. Missing from page 2-14 following 2.3.14 (Transport of Offshore BA Sand Via Onshore Pipeline)	Use of Non-Domestic Sand Source was removed from the list under 2.3.

141	Palm Beach County	Kim Miranda	Page 2-13: 2.3.12. Breakwaters with Dune and Beach Nourishment: Comment: Description of breakwater establishes a negative precedent for the possible use of breakwaters in the future. An EIS evaluation was not completed for any of the proposed breakwater projects along the County's shoreline and therefore potential adverse effects were not fully identified.	Text was revised in Section 2.3.12 to remove negative connotation with breakwaters.
142	Palm Beach County	Kim Miranda	Page 2-15: Comment (Second Paragraph): Include a table verifying the 25,000 CY of sand placed within the Project Area by the Town and County.	Text in Section 2.4.1 was revised to reflect the volume that has been previously placed in the Project Area with reference to Table 1-1.
143	Palm Beach County	Kim Miranda	Page 2-28: Edit (First paragraph): Within Palm Beach County, upland sand has also been used for restoration efforts on the Jupiter Beach/Carlin project.	Jupiter Beach/Carlin reference was added to the projects listed in Section 2.5.2.
144	Palm Beach County	Kim Miranda	Page 2-34: Table 2-3 (The cost of each aspect of the alternatives evaluated…) Comment: County costs (per 2014-15 contract) for mined sand from Stewart Mining Industries (from Indrio Road to South Palm Beach) is $24.40/ton = $29.28/c.y. (*does not include site prep/restoration, Maintenance of Traffic (MOT) or Sand QA/QC). Cost breakdown for $24.40/ton = $29.28/c.y. is the following: sand supply = $10.06; transport 1st ton-mile = $1.36; transport 73 additional ton-miles @ $0.15/ton-mile = $10.95; placement <1000' from access = 2.03.	Acknowledged. Cost was maintained at $46/cy for upland sand to maintain a conservative estimate and account for mobilization, transport/delivery, beach placement, grading, demobilization, site restoration, beach tilling, performance and payment bond, and indemnification.
145	Palm Beach County	Kim Miranda	Chapter 4 Environmental Consequences: 4.1.3. Cumulative Effects: Comment: The DEIS states that "the Town of PB and County plan to apply for DA authorization to maintain the Project at least every four years" however the County's project was designed and modeled with a three-year fill frequency.	Revised text to reflect a 3-4 year maintenance cycle.
146	Palm Beach County	Kim Miranda	Page 4-54: 4.5.2.2. Disturbance of Sand Bottom Habitats: This section only references upland sand when other sand sources (stockpiled dredged sand) are proposed for the TPB project.	A reference for stockpiled dredged sand was added to all Sections in 4.5.
147	Palm Beach County	Kim Miranda	Page 4-55: 4.5.2.3. Turbidity: Comment: DEIS needs to be consistent. The nourishment material is referred to as sand, beach sand and sediment from upland mine and dredge material. For example, under 4.6.4.3. (Turbidity) the sand is referred to "upland sand and stockpiled dredged sand."	The nourishment material was updated to stockpiled dredged sand and upland sand for consistency.
148	Palm Beach County	Kim Miranda	Page 4-75: 4.20. Natural Or Depletable Resources: Comment: Not all of the proposed 150,000 CY of sand is currently from an upland mine. Borrow area sand is being considered for the TPB project.	Text revised to include offshore borrow areas.
149	Palm Beach County	Kim Miranda	Page 4-79: Table 4-2 (Beach Jacquemontia): Edit: Past & Present write-up references Johnson's seagrass.	Text referencing Johnson's seagrass was deleted.
150	Palm Beach County	Kim Miranda	Page 4-82: Table 4-3 Recent Beach Nourishment Projects: Comment: Under the Project Column (2007 2009) include that the dune restorations were completed in Town of South Palm Beach and Lantana.	Projects in the Towns of South Palm Beach and Lantana were added to Table 4-3 (now Table 4-5).
151	Palm Beach County	Kim Miranda	Page 4-85: Comment (second paragraph): The Mayfair House in SPB was never included in the dune restoration projects. Specify that the FEMA truck haul partial nourishment took place within the Town of Palm Beach (not a County project).	Text revised so the Mayfair House was removed and the FEMA project within the Town of Palm Beach was clarified.
152	Palm Beach County	Kim Miranda	Page 4-86 & Page 4-88: 4.28.1.3. (Reasonably Foreseeable Future Activities): Same comment as provided above for 4.1.3 Cumulative Effects. The DEIS states that "the Town of PB and County plan to apply for DA authorization to maintain the Project at least every four years" however the County's project was designed and modeled with a three-year fill frequency.	Section 4.28.1.3 was revised to indicate that the USACE is considering a 10-year authorization with maintenance (see response to Comment #73) and that the Town and County plan to maintain the project area approximately every 3 to 4 years.
153	Palm Beach County	Kim Miranda	Page 4-91: Edit (second paragraph): In the first sentence, the word "listed" should appear before "coral species."	Text was revised as recommended.
154	Palm Beach County	Kim Miranda	Page 4-92: 4.28.2.4. Essential Habitat: Edit: The incorrect number of acres is listed for mitigative artificial reef.	12.16 acres was the correct impact amount (12.18 ac was a typo); however, this acreage has been updated to include the 2014 hardbottom delineation dataset and the additional modeling results for a range of grain sizes throughout the document.
155	Palm Beach County	Kim Miranda	DEIS APPENDICES & REPORTS; SBEACH ANALYSIS REPORT (COMMENTS PREVIOUSLY PROVIDED FEBRUARY 26, 2014); APPENDIX A *PUBLIC SCOPING REPORT* (NO COMMENT); APPENDIX B *PBC TECHNICAL SAND SPECIFICATIONS* (NO COMMENT); APPENDIX C *PBC ACROPORA SURVEY* (NO COMMENT); APPENDIX D *2013 CHARACTERIZATION REPORT* (COMMENTS PREVIOUSLY PROVIDED JUNE 5, 2014)	

156	Palm Beach County	Kim Miranda	APPENDIX F *DRAFT ESSENTIAL FISH HABITAT:* Page 9: 2.1.2. GROIN CONSTRUCTION: Comment: Need to state that the groins are designed to minimize erosion downdrift. *"The result will be a disruption of the natural littoral sand transport system along the beach in this area, with sand accretion/sediment deposition occurring on the updrift side and erosion on the downdrift side of the groin field."*	Added text indicating the low-profile design of the groins is meant to minimize downdrift erosion.
157	Palm Beach County	Kim Miranda	Page 41: 4.2. Mitigation Measures: Comment (first paragraph): The use of beach compatible sand reduces impacts to not only infauna and increases recovery time but also decreases temporary turbidity associated with the projects and increases the chances of sea turtles nesting successfully along project beaches. Edit (first sentence/second paragraph): missing the word "in" (will result **in** permanent impacts…)	Text revised.
158	Palm Beach County	Kim Miranda	Page 42: 5.0. Conclusion: Comment: Displacement of infauna is associated with sand placement along with "groin construction, noise disturbance, and elevated turbidity."	Text was revised for clarification.
159	Palm Beach County	Kim Miranda	APPENDIX G *ENGINEERING ANALYSIS & NUMERICAL MODELING* (NO COMMENT)	
160	Palm Beach County	Kim Miranda	APPENDIX H *DRAFT UMAM ANALYSIS:* Comments: Palm Beach County does not concur with the UMAM scoring methodology completed for the DEIS. As proposed, the methodology assumes that the impacted ephemeral nearshore hardbottom is self mitigating. Palm Beach County offers the attached UMAM analysis for the Palm Beach County portion of impacts. Palm Beach County assumes that mitigation reef performance is independent of the hardbottom impacts or coverage duration therefore the County submitted one score sheet for the mitigation reef. The County intends to install the mitigation reefs prior to construction of the project thereby reducing the risk factor to 1. The County's UMAM analysis did not incorporate "secondary impacts" since the impacts are beyond the ETOF and are not supported by the modeling results. Secondary impacts as presented are based on assumptions that sedimentation beyond the ETOF are associated with migration of fill material.	
161	Palm Beach County	Kim Miranda	APPENDIX I *DRAFT COMPENSATORY MITIGATION PLAN:* Page 1: 1.0 GOALS & OBJECTIVES*:* Comment (Second Paragraph/First Sentence): The County's project was not designed to enhance the stability to the existing private seawalls. Please remove this language. The goals and objectives for the shoreline protection projects are to provide more sand into the littoral system and create a stable beach and dune that will buffer the effects of storm surge and wave action, provide wildlife habitat, allow for recreational use and protect upland infrastructure.	Text revised.
162	Palm Beach County	Kim Miranda	Page 3: Number 1 (The Specific Goals of the CMP are): Comment: The County's UMAM analysis did not incorporate "secondary impacts" since the impacts are beyond the ETOF and are not supported by the modeling results. Secondary impacts as presented are based on assumptions that sedimentation beyond the ETOF are associated with migration of fill material.	
163	Palm Beach County	Kim Miranda	Page 9: 2.1 Site Selection Process Comment: Please incorporate the County's Sub-bottom Profile Investigation & Hydrographic Survey results completed in October 2014.	The sub-bottom profile Investigation and hydrographic survey was referenced in Section 2.1 of the CMP.

164	Palm Beach County	Kim Miranda	Page 10: Edit (second paragraph): The mitigation units themselves will be sized such that they will be individually stable under the influence of tide, current, and wave conditions that **are reasonably** likely to occur for storm events with a return period of at least 25 years.	Revised text.
165	Palm Beach County	Kim Miranda	Page 12: 4.1 Impact Site Comment: Project impacts listed within the DEIS are skewed due to a significant increase in hardbottom exposure during 2006 and 2007. This period of high hardbottom exposure is due to a series of storms and is not necessarily a true representation of typical hardbottom exposure.	See response to Comment #62.
166	Palm Beach County	Kim Miranda	Page 13: 4.2 Mitigation Sites Comment: Based on the County's UMAM evaluation a total of 4.29 acres of pre-mitigation will be required to offset impacts to hardbottom.	
167	Palm Beach County	Kim Miranda	Page 15: 6.1 Timing of Mitigation: Comment: The County intends to build their required mitigation reef prior to project construction.	Text revised to reflect the County's intent.
168	Palm Beach County	Kim Miranda	APPENDIX J ***CUMULATIVE IMPACT ANALYSIS:*** Page 3: Comment (second paragraph/first sentence): The County's project was not designed to enhance the stability to the existing private seawalls. Please remove this language. The County's purpose or goal of the project is to provide storm protection to park and upland infrastructure, stabilize nesting habitat and enhance or maintain/stabilize recreation and the existing beach and dune system.	See response to Comment #161.
169	Palm Beach County	Kim Miranda	Page 10: Upland Sand Source: Comment (first paragraph): Within Palm Beach County, upland sand has also been used for restoration efforts on the Jupiter Beach/Carlin project.	Jupiter Beach/Carlin reference was added to the projects listed in Upland Sand portion of Section 1.1.1.
170	Palm Beach County	Kim Miranda	Page 18: 2.2 Temporal Scope: Comment (first paragraph): The County would not build mitigative artificial reefs November through April as proposed within the DEIS. The reefs would be constructed during the summer months when there is less wave action.	Text revised to reflect the County's intent.
171	Palm Beach County	Kim Miranda	Page 19: Nearshore Hardbottom.: Comment (first paragraph/second sentence): List the towns included within the County's project area.	Towns of South Palm Beach, Lantana, and Manalapan were added.
172	Palm Beach County	Kim Miranda	Page 23: Comments (third paragraph): Rewrite the first sentence of last paragraph for clarity; Regarding the second sentence, include that artificial lighting can also lead to the disorientation of nesting females; Palm Beach County has not adopted "sloping turtle berm elevations" for "all beach nourishment activities along the PBC shoreline".	Text revised for clarification.
173	Palm Beach County	Kim Miranda	Page 28: 4.1 Cause & Effect Relationships: Edit (third paragraph/first sentence) Change to the following: Mechanical **activities** and **artificial** lighting along the beach can adversely impact marine turtle nesting by; (1) physical impact; (2) burial, inundation and/or exposure of nests; (3) establishment of beach sediment that is not compatible with nesting; and (4) disorientation **of adults and hatchlings**.	Text revised as recommended.
174	Palm Beach County	Kim Miranda	Page 30: Comment (first paragraph): Palm Beach County has not yet adopted "turtle friendly" fill placement geometries as stated within the DEIS. Comment (second paragraph): The statement within the DEIS that the actions will not result in a cumulative increase in sand placement along the project impact area because dune restoration was periodically completed is not true for the County project area. All dune restoration projects completed were small in scale while the proposed project requires a greater fill quantity. In addition, the County does not plan to place sand from offshore sand sources.	The text was revised to remove the "turtle friendly" language from the County project. The text was revised to state that the proposed Project *may* result in a cumulative increase in sand placement and previous dune restoration project information for the Town of Palm Beach and the County was added. Upland sand was added to account for the County's sand source preference.
175	Palm Beach County	Kim Miranda	Page 42: Table 7-1: Edit: Smalltooth Sawfish /Construction of Artificial Reefs references swimming turtles	Text revised.
176	Palm Beach County	Kim Miranda	Page 43: Table 7-1: Edit: Construction of Artificial Reefs/Water Quality refers to groin construction	Text revised.

177	Surfrider Foundation	Holly Parker	Applicants' Preferred Alternative: After reviewing the Reach 8 Draft EIS, we are pleased to see the Town's portion of the Preferred Alternative requests a suitable volume of sand. It appears that this portion of the Preferred Alternative gives appropriate attention to nearshore hardbottom resources, has a long-term plan for continued maintenance, and provides appropriate protection for upland properties. As always, we encourage the use of the highest quality sand, with special attention to keeping the percentage of silt and clay as low as possible. The FDEP sediment quality compliance specifications as per the Beach Management Agreement, are a marked improvement from the Reach 8 Sand Quality Control & Quality Assurance Plan from 2007. Specifically, we are pleased to see the decrease in Maximum Silt levels from 5% to 2%. That said, monitoring remains of paramount importance to assure that the sand quality specifications are adhered to in every step of the project.	
178	Surfrider Foundation	Holly Parker	While we are supportive of the current iteration of the Town's portion of the Preferred Alternative (subject to the issues raised herein below), we are deeply concerned with County's portion of the Preferred Alternative. The County's proposal to place 24,500 cubic yards of fill below the Mean High Water (MHW) Line is more than double that of the Town's proposal to place 12,000 cubic yards of fill below the MHW Line. While we are pleased that the County intends to use upland sand, this should not allow them to use an excessive and inappropriate volume of fill. Additionally, the Surfrider Foundation Foundation opposes the use of groins, which the United States Army Corps of Engineers' Coastal Engineering Manual describes as, "…probably the most misused and improperly designed of all coastal structures….Over the course of some time interval, accretion causes a positive increase in beach width updrift of the groin. Conservation of sand mass therefore produces erosion and a decrease in beach width on the downdrift side of the groin." (USACE, 2002) It is commonly accepted knowledge that groins steal sand that should be deposited on the downdrift end of the beach. Once one groin is built, other municipalities will want to follow suit. This portion of the alternative requires much more study and analysis. Exactly how much disruption of littoral sand movement will occur as a result of the proposed groin field?	See response to comment #82.
179	Surfrider Foundation	Holly Parker	These costly and damaging groins will not guarantee increased project durability, and are a massive and wasteful expense to the taxpaying public. Preliminary analysis of the data in the DEIS show that Alternative 2, which incorporates the use of groins, will cost $10,700,000, which equates to $71.33 per cubic yard. For perspective, the average cost per cubic yard since 2010 for beach fill projects in Florida is $15.40. This includes the cost for mitigating the permanent loss of 4.03 acres of nearshore hardbottom and the temporary and secondary loss of 8.13 acres of nearshore hardbottom. This cost differential, particularly given the groins' inefficiency and injurious effects, is unacceptable and sets a dangerous precedent for neighboring communities.	Project performance and cost are factors considered in the evaluation of the EIS to determine the Least Environmentally Damaging Practicable Alternative.

180	Surfrider Foundation	Holly Parker	Save Our Shoreline Alternative: We strongly discourage any additional consideration of the Save Our Shoreline (SOS) Alternative. The environmental impacts from the SOS alternative are three times greater than the Applicants' Preferred Project and will result in permanent impacts to 12.69 acres of hardbottom, and temporary/secondary impacts to 5.85 acres of hardbottom, for a total of 18.54 acres affected. A loss of 18.54 acres of nearshore hardbottom is unprecedented and ecologically devastating (the environmental implications of this loss are set forth in further detail below). Not only is this proposal outsized, it includes the construction of two T-groins. The Western Carolina University Program for the Study of Developed Shorelines notes, "The impact of groins on downdrift shorelines is well understood. When a groin works as intended, sand moving along the beach in the so called downdrift direction is trapped on the updrift side. This well-documented and unquestioned impact is widely cited in the engineering and geologic literature." (Young, et al) They also cite Paul Komar, professor emeritus at the College of Oceanographic and Atmospheric Sciences at Oregon State University, "Groins and jetties have the same effect in damming the longshore sediment transport, the shoreline builds out on the updrift side and erodes in the downdrift direction." (Komar, 1998) As such, this alternative does not warrant additional consideration.	
181	Surfrider Foundation	Holly Parker	Nearshore Hardbottom Impacts: The coasts of Palm Beach County are rich with nearshore hardbottom, corals, and a number of species which are listed as endangered or threatened under the Endangered Species Act. The Draft EIS cites the recent survey of nearshore hardbottom noting, "Biologists from NMFS Habitat Conservation Division (HCD) and the U.S. Environmental Protection Agency (EPA) have visited the Reach 8 site on several occasions, most recently on February 24, 2011 during low tide. Consistent with previous 2004 and 2005 findings, exposed hardbottom was clearly visible from the shoreline throughout much of Reach 8 during this assessment. Hardbottom was noted in two distinct areas in the southern portion of Reach 8. The southern area of hardbottom started approximately 91m (300 ft) north of R-134 and continued south beyond the southern boundary of Reach 8 (USACE, 2011b). This nearshore hardbottom serves a number of critical ecological functions. It provides shelter and feeding resources to an astonishing number of species, including: 340 species of algae, 533 species of invertebrates, 257 species of fishes, and three species of sea turtles. (Lindeman, 2009) Nearshore hardbottom also serves as a spawning site for invertebrates and fishes, and as important nursery habitat for juvenile species. The Gulf Stream current passes by Reach 8 and carries on it fish and lobster larvae from as far away as Cuba and the Yucatan (Mumby, et al).	
182	Surfrider Foundation	Holly Parker	The Draft EIS cites a 2009 CSA International study of fish assemblages associated with the nearshore hardbottom within the Project Area. "The results of the investigation revealed 70 species dominated by black margate (Snisotremus surinamensis), siver porgy (Diplodus argenteus), newly settled grunts (Haemulon spp.), sailors choice (H. parra), hairy blenny (Labrisomus nuchipinnis), and porkfish (A. virginicus)…CSA International identified 24 federally managed species during their 2009 surveys of the nearshore hardbottom. Many of these managed species occurred as newly settled or juvenile stage individuals indicating that the area serves as effective juvenile habitat for managed species."	

183	Surfrider Foundation	Holly Parker	The Preferred Alternative proposes to permanently impact 4.03 acres of nearshore hardbottom through direct impacts, and an additional 8.13 acres through secondary and temporary impacts. While this loss of hardbottom habitat is less than that proposed in the SOS Alternative, it is still unacceptable. The ecological and economic costs are simply too great, and unwarranted. A study entitled *Socioeconomic Study of Reefs in Southeast Florida* (Johns *et al, 2001*) commissioned by Florida State University and NOAA found that reef related expenditures in Palm Beach County generate $190 million and sustain 6300 jobs annually. The loss of such a significant amount of nearshore hardbottom resources under the Preferred Alternative would have dire consequences not only in and of itself on the coastal resources themselves in those areas, but on the local revenue and employees who depend on those resources. These economic resources are just a small fraction of the total resources that will be impacted by such a significant loss of nearshore hardbottom habitat.	
184	Surfrider Foundation	Holly Parker	Mitigation: The loss of nearshore hardbottom habitat requires a mitigation reef to provide kind-for-kind habitat mitigation. The proposed nearshore hardbottom mitigation reefs for the County are proposed in depths of 10 to 20 feet of water, while the Town's mitigation is proposed at depths of approximately 15 feet. A 2014 study titled, *Mitigating the functions of nearshore hardbottom in east Florida: Field comparisons of natural and artificial reef structures* attempted to determine how depth of mitigation reefs impacted the assemblage dynamics and overall success. The study makes a number of recommendations, which we suggest should be incorporated in the proposed mitigation plans. The study notes, "Sea turtles were recorded only once on the artificial reefs. In addition to feeding on macroalgae, sea turtles use natural reefs for shelter, taking advantage of overhangs, crevices and ledges not generally provided by the limestone boulders of the type used in this study." (Lindeman, et al, 2014) The limestone boulders referenced in the study are the same type proposed for mitigation by both the Town and County. The study also notes that mitigation reefs in 4-6 meter water depths can develop assemblages only if they are relatively undisturbed by sediment. "Disturbance regime here includes bed load transport and volume (increasing because of semi continuous dredge and dune projects), and movement of sediment and associated bar formation across the shelf, an important issue with the 4- to 6-m water depth range in Palm Beach County. For example, during the course of this project there were two instances of cross-shelf sand bar migrations that completely buried the outer rows of artificial reef boulders. This can happen overnight or gradually based on our observation with this project and others in the area." (Lindeman, et al, 2014) At the depths proposed in the Preferred Alternative, the mitigation reefs (especially those in the County's proposed depth of up to 20 feet), risk burial and total uselessness.	Review text (section 5.1.1.3, 5.2.9)
185	Surfrider Foundation	Holly Parker	Lastly the study produced a number of results on the impacts of water depth to epibiota, fishes, sea turtles, and invertebrates. Their findings are nuanced and varied, but in many cases they find that water depth has significant impacts on the success of the project. On the settlement of fishes they found, "Water depth within the 0- to 4 m range was not an important factor for most fishes sampled; however, the black margate was observed only in the shallowest depths (<1m) on natural reefs. These limited data suggest that artificial reefs constructed in deeper waters may not provide adequate settling microhabitat for this and possibly other species." (Lindeman, et al, 2014) Given these facts, there can be no adequate mitigation for the loss of 12.16 acres of nearshore hardbottom.	
186	Surfrider Foundation	Holly Parker	In conclusion, the permanent loss of 4.03 acres of nearshore hardbottom through direct impacts and an additional 8.13 acres through secondary and temporary impacts, proposed under the Preferred Alternative, is unacceptable. The loss of over 12 acres of nearshore hardbottom will cause irreparable harm to the local ecosystem, recreational resources, fisheries, and the local economy. Further, the proposed mitigation is inadequate, potentially ineffective, and would not provide adequate compensation for loss of habitat and resources.	

187	Town of Palm Beach	Thomas Bradford	Complete the modeling of the project with Ortona sand and structures proposed by The Coalition To Save Our Shoreline, Inc. (S.O.S.), and report the results including storm protection benefits, environmental impacts, project life, and estimated cost.	See response to Comment #49.
188	Town of Palm Beach	Thomas Bradford	Evaluate the performance of the Town's preferred project using upland grain sizes of 0.33mm (Stewart Mine) and 0.45mm (Ortona Mine). Compare the cost and performance of these alternatives to the cost and performance of the same project using 0.25mm dredged sand (BMA minimum grain size).	See response to Comment #49.
189	Town of Palm Beach	Thomas Bradford	Report the existing level of storm protection and the level of storm protection provided by each project evaluated for each property in Reach 8.	The storm protection was evaluated by running several cross-sections located within Reach 8 under different storms (5, 15, 25, 50 and 100-yr return period). The results of these analyses are presented in Sub-Appendix G-1.
190	Town of Palm Beach	Thomas Bradford	Add a pipeline corridor within the nourishment area of the "Preferred Alternative" for hopper dredging technology.	See response to Comment #108.
191	Town of Palm Beach	Thomas Bradford	The current recommendation by the SPB and direction from Town Council is to build both the Reach 7 project and the Reach 8 project next winter with the goal of providing additional storm protection as soon as possible. The additional study items, if addressed by the USACE, may extend the final EIS schedule making it unlikely that a Reach 8 Beach Restoration project will be constructed as scheduled. The Reach 7 final design and permitting is underway.	
192	Town of Palm Beach	Thomas Bradford	In FY 2014, Town Council previously appropriated $1 million toward the Reach 8 EIS effort. To date, the total cost of the EIS (based on two separate authorizations approved by Town Council), total $858,630. Per interlocal agreement, the County is to pay 38.6% of the total EIS cost (approximately $331,431). The net cost to the Town for the existing authorizations is approximately $527,000. Should the Town request that the USACE perform additional Reach 8-specific efforts related to the S.O.S. proposed project, grain size modeling, and storm protection modeling, the Town may be responsible for 100% ofthe additional costs. Additional funding may be required.	
193	Town of Palm Beach	Rob Weber	Review the contents of the letter from Coastal Systems International, Inc. (CSI), dated January 26, 2015, and address as necessary in development of the final EIS	
194	Town of Palm Beach	Rob Weber	Be sure that the final EIS considers the optional use of a larger grain size consistent with approved upland sand sources and appropriately evaluate the alternatives, as necessary, with the larger grain size, including the Town's "Preferred Alternative" of approximately 75,000 cubic yards, as identified in Alternatives 2, 3, and 4.	See response to Comment #49.
195	Town of Palm Beach	Rob Weber	Consider Alternatives 5 and 6 (with a larger volume of sand along the Town of Palm Beach shoreline of approximately 96,000 cubic yards), as necessary, using a larger grain size consistent with approved upland sand sources.	See response to Comment #49.

196	Town of Palm Beach	Rob Weber	In summary, the Town is looking to maintain flexibility with respect to the sand source to use for construction of a project in Reach 8 south of the Lake Worth pier that is to be identified in the final EIS. This flexibility should include the use of the approved offshore borrow areas identified in the State of Florida Department of Environmental Protection's Palm Beach Island Beach Management Agreement (BMA) Pilot Project and previously approved upland sand mines. BMA-approved offshore sand sources include North Borrow Area-l (NBA-1), South Borrow Area-2 (SBA-2), and SBA-3. Previously approved upland sand sources permitted for sand placement in the Town have included E.R. Jahna Ortona Sand Mine in La Belle, Florida, and Stewart Mining Industries, Inc. in Fort Pierce, Florida.	Added Stewart Mining Industries, Inc. as a preferred upland sand source for the Town of Palm Beach.
197	Town of Palm Beach	CSI / Penny Cutt	Exposed Hardbottom Area Calculation - There is no clear explanation in the DEIS or any of the Appendices as to how the time averaged area of exposed hardbottom between 2003 and 2013 was calculated. Therefore, the accuracy of the hardbottom impact calculations cannot be properly evaluated. There is additionally no reference to consultations with regulatory agency staff, policy, or precedent confirming the likelihood of agency approval of the calculated hardbottom impact area/mitigation based on the time averaged hardbottom area. This information should be presented within the DEIS for review.	Section 1.1.3 was revised to include the USACE's decision to utilize the time-average approach. Section 4.4 of the EIS, Appendix E (3.3), Appendix F (3.1), Appendix H (1.0) and Appendix J (1.1) were revised to describe how the Delft3D results were processed and input to the time-average calculation to come up with impact acreages and subsequent mitigation acreages. Development of this entire approach was done in close coordination with USACE.
198	Town of Palm Beach	CSI / Penny Cutt	ETOF- The "Analytical Equilibrium Toe of Fill" calculations state that the Equilibrium Toe of Fill (ETOF) coincides with the depth of closure in all locations; however, no data to support this conclusion is presented. Examples, calculations, figures, and assumptions for each profile used in the ETOF analysis should be presented for review.	Additional text will be added to clarify ETOF calculations. See response to Comment #84.
199	Town of Palm Beach	CSI / Penny Cutt	Hard bottom Impact Calculations - There is no clear explanation/figure depicting: 1) the time averaged exposed hardbottom area polygon, or noting the percentage of the Project area that was considered to contain time averaged exposed hardbottom, and 2) predicted hardbottom impact and exposure areas due to sand spreading, scour resulting from shoreline stabilization structures, or other Project influences. Presentation of these figures would be helpful in visualizing these affected areas.	1) There isn't a polygon that represents a time-averaged hardbottom. This area is based on a calculation derived from hardbottom delineations over a series of years. 2) Figures 4-1 through 4-3 present the impact polygons from the Delft3D model results based on the range of grain sizes modeled for the preferred alternative.
200	Town of Palm Beach	CSI / Penny Cutt	The estimation of temporary and permanent impacts to hardbottom should be further clarified. The DEIS appears to indicate that a combination of numerical modeling utilizing DELFT3D and "desktop" profile translation analyses were conducted. Use of the DELFT3D model for ETOF estimates and associated hardbottom coverage should be verified due to the limitations of this type of model (morphological). A tolerance or "ranges" of hardbottom coverage estimates should be presented, as opposed to an exact acreage. The limits of hardbottom coverage predicted by DELFT3D and by Profile Translation should be presented for comparison.	See reponse to Comment #197. The comment was addressed by simulating a range of fill grain sizes. Impacts on the hardbottom were analyzed for each sediment grain size simulated and are presented in Chapter 4.
201	Town of Palm Beach	CSI / Penny Cutt	The "Draft DELFT3D Modeling Report" results in Sub-Appendix G-3 are overlaid on 2012 hardbottom data, while the exhibit located in various parts of the DEIS entitled "Alternative 2 - Applicants' Preferred Alternative Anticipated Nearshore Hardbottom Impacts" only clearly depicts the 2013 hardbottom boundary. The "Draft Compensatory Mitigation Plan" notes that "Based on engineering and modeling results (Appendix G to the EIS) it is anticipated that the Project may result in permanent impacts to 4.03 ac of hardbottom as well as temporary and secondary impacts to 8.13 ac of hardbottom ... ". However, the "Draft DELFT3D Modeling Report" in Sub-Appendix G-3 notes that "At the end of the 3 years, there was an estimated coverage of 8.62 acres of hardbottom and an exposure of 3.84 acres [attributed to Alternative 2]" and "The net change in hard bottom at the end of the simulation period (exposure minus coverage) as a result of the project is estimated to be -4.78 acres." It is not clear how the Appendix G engineering and modeling results were ultimately interpreted to indicate the impact acreages referenced in the "Draft Compensatory Mitigation Plan".	See response to Comment #200.

202	Town of Palm Beach	CSI / Penny Cutt	It is also unclear as to why a secondary impact area is depicted in the DEIS exhibit entitled "Alternative 2 - Applicants' Preferred Alternative Anticipated Nearshore Hardbottom Impacts" within the ETOF polygon, but waterward of any documented historical limits of exposed hardbottom. Therefore, the accuracy of the hardbottom impact calculations cannot be properly evaluated. Additionally, the level of reasonable assurance that a particular impact will persist for one, two, or three years is unknown.	The entire ETOF polygon was originally designated as the "secondary" impact area. See response to Comment #109.
203	Town of Palm Beach	CSI / Penny Cutt	UMAM - The Draft Uniform Mitigation Assessment Method (UMAM) Analysis contained within Appendix H is not consistent with the procedures defined within Chapter 62-345, Florida Administrative Code (F.A.C.). For example, an impact area cannot be considered partially-self mitigating, a mitigation area score cannot include two unrelated polygons (impact area and artificial reef), and the score for one area cannot be subtracted from the score for another area. Additionally, per the UMAM Rule, for areas being filled, all three category scores should go to zero, since all aquatic functions and values of the polygon, as defined in Part I, are lost when that polygon is filled. Justification from the agencies for the application of UMAM presented in Appendix H should be presented.	The approach used to determine mitigation for temporary impacts was based on discussions and email correspondance with FDEP as cited in Appendix H under the definitions of Temporary impacts in 1.0 Introduction. See response to Comment #78.
204	Town of Palm Beach	CSI / Penny Cutt	Hardbottom Impact Categories - The definitions for impacts presented in the DEIS and Appendix H are not consistent with the definitions presented in the BMA (Appendix B - Cell-wide Monitoring & Mitigation Plans) or previously issued permits for similar beach projects. Appendix B of the BMA states that *direct impacts* are direct cover of hardbottom through fill, usually within the ETOF and *indirect impacts* are expected secondary impacts to communities through increased sediment loading in the area. Appendix B of the BMA also states that *secondary impacts* is often used interchangeably with *indirect impacts.* The DEIS and Appendix H indicate that *permanent impacts* are those that will result in burial for at least 3 years and *temporary impacts* are those that are expected to be buried for less than 3 years. Both the *permanent impacts* and *temporary impacts* presented in the DEIS would be considered *direct impacts* by the BMA and previously issued permits for similar beach projects, as they are both occurring within the ETOF. It is not clear in the DEIS how predicted *indirect impacts* were discerned from *secondary impacts.*	The primary means for determining impacts in this project were based on the results of the engineering and modeling study using Delft3D instead of the traditional ETOF. Due to the ephemeral nature of this particular hardbottom habitat and the results of the modeling study, the USACE determined that the level of impacts were more complex than only direct and indirect. See response to Comment #109.
205	Town of Palm Beach	CSI / Penny Cutt	Mitigation - Direct impacts are generally considered to be impacts within the ETOF because the ultimate goal of the applicant is to maintain the beach project in perpetuity. This is how direct impacts are typically assessed, as referenced in the BMA. Once mitigated, if these resources become re-exposed, additional mitigation should not be required by the agencies prior to construction of a subsequent beach nourishment project. The nourishment cycle for the proposed Project is only 3 years and with continued inputs of sand into the littoral system updrift of this Project, it is likely that the hardbottom within the ETOF will remain at least partially buried over time. By mitigating these hardbottom impacts at the time of Project construction rather than when post-construction monitoring results indicate burial, the time lag between when aquatic functions and values are lost and when these aquatic functions and values are replaced is reduced. As such, mitigating impacts at the time of project construction results in the most cost effective mitigation. While we agree with the concept of providing a lesser level of mitigation for temporary impacts, and it appears that the intent is to propose mitigation sufficient to address the level of impacts that will result from temporary coverage of hardbottom resulting from the Project inclusive of subsequent nourishments, reasonable assurance that these areas of temporary impacts will continue to become re-exposed if the Project is maintained over time is not clearly provided in the DEIS.	See response to Comments #78 and 80.

206	Town of Palm Beach	CSI / Penny Cutt	Graphic Depiction of Alternatives - It would be helpful to have figures depicting the Construction Toe of Fill (CTOF) and Equilibrium Toe of fill (ETOF) within the DEIS document when the alternatives are first presented. For example, the DEIS states that for Alternative 5, the volume of sand within the Town's portion of the Project increases slightly but the distribution would vary from the preferred alternative design. There is no description or figure indicating how the distribution of sand would be altered with Alternative 5 (or Alternatives 4 and 6).	Figures 2-2 through 2-6 represent the beach fill, dune fill, coastal structures, and ETOF design for Alternatives 2 through 7b.
207	Town of Palm Beach	CSI / Penny Cutt	Project Goals- The Town and County (Applicants) goals and objectives for the Project vary throughout the document. Consistent goals and objectives should be identified and presented in the DEIS and the Appendices.	The Applicants' goals and objectives were updated for consistency throughout the EIS and the Appendices.
208	Town of Palm Beach	CSI / Penny Cutt	Abstract: The Overall Project Purpose should be a standalone statement that references the geographic area of the Project. The Overall Project Purpose should be specific enough to define the applicant's needs, but not so restrictive as to preclude all discussion of alternatives. The Applicants' needs must be considered in the context of the desired geographic area of the development and the type of project being proposed. The Overall Project Purpose presented in the Abstract states, "The overall Project purpose is to minimize future adverse storm induced effects by nourishing the beach to replace the sand that has been lost due to erosion, and also ameliorate the current erosion rate to an extent that nourishment intervals would likely occur approximately every three years." This statement does not provide a geographical range for evaluating practicable alternatives under Section 404(b)(1) Guidelines and does not reference the target level of storm protection, provision of a recreational beach amenity, or maintenance of sea turtle nesting habitat.	The USACE has revised our overall project purpose statement. Comment noted.
209	Town of Palm Beach	CSI / Penny Cutt	The Abstract states, "Additionally, the County project includes construction of coastal structures consisting of seven (7) low-profile panel groins placed perpendicular to the shoreline extending from the existing seawalls to the post-construction (beach nourishment) waterline (approximately 90-feet seaward from the dune)." Please clarify whether this is referring to 90 feet from the existing dune or 90 feet from the restored dune. Similarly, the reference to "waterline" should be clarified throughout the document as to whether it is referring to Mean High Water, Mean Sea Level, High Tide Line, etc.	The groins are proposed to extend 90 ft from the seawall. Waterline refers to mean high water (MHW).
210	Town of Palm Beach	CSI / Penny Cutt	The Abstract also states "This includes approximately 12,000 cubic yards placed below the mean high water (MHW) line and the remaining 63,000 cubic yards placed at or above MHW to partially restore the supra-tidal beach and dune." This statement calls out the sand volume above and below MHW for the Town segment of the Project but not for the County segment of the Project. This should be clarified in the FEIS.	The County volumes above and below MHW were added.

211	Town of Palm Beach	CSI / Penny Cutt	Executive Summary: A. Background: This section states that "This Draft EIS evaluates the environmental and economic impacts of the two proposed beach stabilization projects ... " However, pursuant to 42 U.S. Code (U.S.C.) 4332(2)(c) and 40 Code of Federal Regulations (C.F.R.) 1508.11 the CEQ NEPA Regulations require an EIS to determine the potential for the proposed action to significantly affect the quality of the human environment and how the action can be modified to avoid such impacts. Specifically, NEPA requires an EIS to disclose the environmental impact of the proposed action, any adverse environmental effects that will be unavoidable if the proposed action is implemented, alternatives to the proposed action, the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources resulting from implementation of the proposed action. Although the Corps permit decision must take into consideration whether the permitted project is practicable, an EIS should not evaluate economic impacts of a proposed project. This section references the required Section 404 Clean Water Act authorization but does not make reference to the required Section 10 Rivers and Harbors Act authorization.	The text was clarified. Comment noted.
212	Town of Palm Beach	CSI / Penny Cutt	E. Description of Alternatives: Throughout the text, the DEIS refers to the Town's project first and then the County's project (presumably to be consistent with other north-to-south references); however, in this section, the bullets under the descriptions for Alternatives 2 through 6 present the County's project first. For clarity and consistency, we recommend the order of the sub-bullets describing the placement of the total sand volume between the two project areas be reversed. These descriptions are also referenced elsewhere within the document and should also be reversed.	The bullets were reordered to present the Town of Palm Beach first.
213	Town of Palm Beach	CSI / Penny Cutt	Sand Sources. This section references the County's technical specifications for beach fill, but does not call out the Appendix where the specific requirements can be found. This section should also reference the requirement to meet the sand specifications within the BMA to ensure the Project is incorporated into the BMA in the future.	Reference to Appendix B and BMA sand specifications was added.
214	Town of Palm Beach	CSI / Penny Cutt	F. Issues Eliminated from Detailed Analysis: This section eliminates a description of transportation impacts stating that effects on highways from construction traffic would be short term and should not cause extended delays on adjacent highways. However, an analysis of the effects of trucking in sand for the Project with the proposed nourishment frequency on local roads may be appropriate. These local roads are not highways and the Project transportation impacts may increase maintenance requirements of these local roads in the future.	As part of implementing an EIS, impacts should be discussed in proportion to their significance (Section 1502.2); therefore the minimal potential impacts to local roadways and highways does not warrant detailed discussion. Also, it would be difficult to discern if impacts to roadways are caused by project related trucks or regular use.
215	Town of Palm Beach	CSI / Penny Cutt	I. Area of Potential Controversy: This section states, "The USACE is also seeking input from stakeholders on the overall Project purpose of either the Town of Palm Beach or the County's project." The USACE must prepare the Overall Project Purpose statement using information provided by the applicant. Please refer to the comment on Overall Project Purpose under "Abstract", above. The public is invited to comment on the scope and content of the DEIS. Regarding the context in which the USACE should consider the exposure of additional nearshore hardbottom, we believe that the net change in hardbottom coverage (coverage vs. exposure) associated with the Project, as compared to the pre-Project/background condition, should be considered when predicting, mitigating for, and confirming Project impacts post-construction.	The USACE determined that a time-average analysis of the amount of hardbottom exposed over 10 years would best represent the habitat since it smooths out short-term fluctuations and provides longer-term trends by averaging a function over iterations of time.
216	Town of Palm Beach	CSI / Penny Cutt	1.0 Purpose of and Need for Project Action: The Table of Contents incorrectly refers to this as "Project of and Need for Project Action".	1.0 in TOC was updated to correct heading.

217	Town of Palm Beach	CSI / Penny Cutt	1.1 Introduction: This Section's reference to the Applicants' goal includes preserving the tax base. Although this may be a goal of the Applicants, it is not presented in other descriptions of the Applicants' project need and it is excluded, as it should be, from the Corps Basic and Overall Project Purpose statements. Protecting the tax base may not provide sufficient justification for ecological impacts, although it is addressed in the DEIS section on Socioeconomics. This Section goes on to state that the Applicants are attempting to provide long-term storm protection and to mitigate shoreline erosion. However, the alternatives evaluated all provide four years or less of storm protection between nourishment events, none of which would be considered long-term. This EIS does consider cumulative impacts; however, the proposed Project is for a single nourishment event. We recommend that the Applicants' Project goals be presented concisely in one location rather than piecemealed throughout the document.	The reference to tax base has been removed. Long-term protection would achievable by initial issuance of the FDEP and USACE permits. It is anticipated that this would ease permitting for future renourishment events. The Applicants' stated purpose and need statement is provided in Section 1.5.1.
218	Town of Palm Beach	CSI / Penny Cutt	1.1.1 Project Location: 1) We suggest that this Section reference Lake Worth Inlet before South Lake Worth Inlet for north to south consistency. 2) This Section states "The erosion rates for this area are driven by many factors, including recent storm events, upland retaining walls, loss of dune habitat, disruptions in littoral sand transport, geographic location on the coast and/or in a littoral cell, proximity to tidal inlets, sea level rise, nearshore beach morphology, hardbottom and adjacent coastal structures." The term "disruptions" is a generic term and the meaning of this factor should be clarified and/or elaborated upon when referencing "disruptions in littoral sand transport." 3) Were separate calculations conducted to determine the erosion rates within the Town for this DEIS or were the erosion rates extracted from the Town of Palm Beach Town-Wide 2011 Physical Monitoring Report prepared by Applied Technology & Management (ATM) in January 2012? If separate calculations were conducted, how does the 2.25 ft/year erosion rate within the Town compare with the results from the ATM monitoring reports? The 2009 memo from the FDEP in response to the previously proposed Reach 8 project questioned the submitted erosion rate calculations.	1) The order of inlets was changed to list the north inlet first. 2) The use of the phrase "disruption in littoral sand transport" in listing factors influencing erosion rates is sufficient in this context as this statement is intended to be more general than specific. In addition, the other factors listed contribute to the distruption in littoral transport. 3) The erosion rates were obtained from CPE (2013), and the ATM (2010) reports an erosion rate of 2 ft/yr.
219	Town of Palm Beach	CSI / Penny Cutt	1.1.2 Agency Goal or Object for this EIS: This Section indicates that an objective of this EIS is to evaluate transporting sand from either uplands sand mines or dredged sand stockpiles to the Project Area; however, in Section F of the Executive Summary, the document states that transportation has been eliminated from detailed analysis. Perhaps the context/scope of the transportation evaluation can be further clarified – not the transportation process itself, but the alternative sand sources in other contexts.	Clarification was added to the Executive Summary Section F.

220	Town of Palm Beach	CSI / Penny Cutt	1.1.3. Decisions to be Made: This Section should specify the range of evaluated direct impacts and a range of evaluated indirect/secondary impacts and present specific acreages for each. This Section should also point out that the ranges are based upon the time averaged hardbottom acreage and not the most current hardbottom survey. Additionally, it may be appropriate to modify the statement that "The information compiled in the EIS will be used by the USACE to determine whether the proposed activities should be authorized and permitted" to state that the USACE will use the EIS to determine the scope of activities that should be authorized and permitted, as the Corps has the option to approve or disapprove the pending applications or approve a modified project. This Section references the permanent, temporary, and secondary impacts associated with the Applicants Preferred Alternative based upon time averaged hardbottom exposure. It may be appropriate to give consideration to storm-induced hardbottom impacts, or make a statement that the "build" alternatives are not anticipated to have a greater storm impact potential than the "no action" alternative, as currently the FDEP is attributing additional impacts from the coastal storm events in 2005/2006 to the Broward County Segment III beach nourishment project. The FDEP issued a Warning Letter of possible violations and non-compliance dated August 21, 2014, to Broward County that references unanticipated impacts through 5 years of monitoring.	This section was revised to include the use of an impact analysis that considers time-averaged exposed hardbottom.
221	Town of Palm Beach	CSI / Penny Cutt	1.1. 4 Project Permitting and Consultation Background: We recommend adding reference in this Section to the pre-application meetings held in 2005 and the application that was submitted and subsequently withdrawn by the Town. This section should also mention the prior and current authorizations for dune construction within Reach 8.	The text was revised in Section 1.1.4 to include the 2005 application to renourish Reach 8 as well as the ongoing dune projects.
222	Town of Palm Beach	CSI / Penny Cutt	Figure 1-2: This Figure does not specify which borrow area is highlighted- North Borrow Area 1 (NBA1), South Borrow Area 2 (SBA2), or South Borrow Area 3 (SBA3). The green box is labeled "Offshore Borrow Area". Does this box encompass all three borrow areas?	Figure 1-2 is a conceptual drawing. The green box is in the vicinity of NBA1. The location of all three borrow areas is provided in Figure 2-3.
223	Town of Palm Beach	CSI / Penny Cutt	1.4 Description of the Proposed Action: 1) This Section states that "The Applicants' goals and objectives for both beach nourishment projects are to provide more sand to the littoral system and to increase the elevation of the beach and dune profile that will buffer storm surge and protect upland infrastructure." This goes on to state that another goal is to " ... provide approximately 40 feet of beach for recreational use on Lantana's Public Beach, as well as enhance sea turtle nesting habitat." The Applicant's goals/Project Purpose should not vary each time they are presented within the document. 2)This Section refers to North Borrow Area 1 (NBA1), South Borrow Area 2 (SBA2), and South Borrow Area 3 (SBA3) but does not specify whether each/all of these areas are included as part of the Reach 7 Phipps and/or Mid-Town permits.	1) The goals and objectives are provided to understand how the stated Purpose and Needs were developed. Minor revisions were made. 2) All three borrow areas are currently permitted for use in Mid-Town and Phipps as per the BMA.
224	Town of Palm Beach	CSI / Penny Cutt	1.5 Project Purpose and Need: The Basic Project Purpose and the Overall Project Purpose are defined by the Corps with the Applicant's input. Therefore, it is somewhat confusing to include sections entitled "1.5.1 Applicant's Project Purpose & Need Statement" and "1.5.2 USACE Interpretation of the Project Purpose and Need Statement".	Separate sections are needed to explain the factors (i.e. applicants' purpose and need, water dependency, and alternatives analysis) that go into determining the overall Project purpose.
225	Town of Palm Beach	CSI / Penny Cutt	1. *5.1 Applicant's Project Purpose and Need Statement:* In this Section the text indicates that the Applicants' purpose and need is to address current erosion rates by stabilizing and widening the project shoreline, extend the interval between projects, provide storm protection for upland infrastructure, property, and wildlife nesting habitat and enhance recreational use in the county portion of the Project. This Section makes no mention of protecting the tax base, which is stated elsewhere within the DEIS. Consistent presentation of the project purpose and need throughout the document is recommended.	This section was revised to reflect the exact words as stated by the two applicants. Reference to the tax base was removed.

226	Town of Palm Beach	CSI / Penny Cutt	1.5.2.2 USACE Overall Project Purpose: The Table of Contents refers to this section as "USACE Overall Project Purpose"; however, page 1-18 incorrectly refers to this section as "USACE Understanding of the Applicants' Overall Project Purpose. See text under "Abstract", above. The Overall Project Purpose defined in this section is "To achieve shoreline stabilization to an extent that upland infrastructure is protected from storms on a 15-year interval within the southern portion of Reach 8, all of Reach 9, and the northern portion of Reach 10." This text is not consistent with the definition of Overall Project Purpose that is presented in the "Abstract". Additionally, as the Reaches have not yet been defined and are not as well-known as regional boundaries, we do not recommend that they be used in the Overall Project Purpose statement. We recommend revision of the Overall Project Purpose to read "To stabilize the shoreline in order to protect the adjacent upland infrastructure from a 15-year return interval storm, provide recreational beach area, and provide nesting sea turtle habitat between the southern boundary of the City of Lake Worth and South Lake Worth Inlet."	The TOC was updated with the correct section title for 1.5.2.2. The reaches have been defined in the project location section (1.1.1).
227	Town of Palm Beach	CSI / Penny Cutt	1.7. Scoping Summary: *1.7.1 Scope of Analysis* : The first bullet in this Section states "Construction activities associated with any of the proposed build alternatives including filling waters with approximately 150,000 cy of beach compatible sand and constructing groins/coastal armoring structures." However, based on information presented elsewhere in the DEIS, of the proposed 150,000 cy of beach fill, only 12,000 cy within the Town and 24,500 cy within the County is proposed to be placed in tidal waters. This Section states "Furthermore, some of the project components also extend beyond the area proposed for fill placement, dredging, and/or construction of coastal armoring structures." Details should be provided to explain the specific Project components that will extend beyond the area proposed for fill placement, dredging, and/or construction. This Section states "The scope of effects are the direct, indirect and cumulative changes as a result of any of the alternatives." However, the effects listed are only for the Applicants' Preferred Alternative. Alternatives 4, 5 and 6 include placement of volumes greater than 150,000 cy and Alternative 5 includes dredging a total of 96,000 cy. We recommend revision of this Section to address the full scope of the analysis.	Clarification was added that the total volume of 150,00 cy includes both placement above and below the MHW. The second paragraph explains the components that extend beyond the area proposed for fill placement, dredging, and/or construction of coastal armoring structures. The specific details associated with Alternative 2 were removed from the bulleted list in order to apply to all alternatives evaluated.
228	Town of Palm Beach	CSI / Penny Cutt	1.*7.2 Cumulative Actions:* It would be helpful to reference a location map (Figure 2-3) here depicting the locations of the referenced beach projects and borrow areas.	Reference to Figure 1-2 was added to Section 1.7.2.
229	Town of Palm Beach	CSI / Penny Cutt	1.9 Organization of the Document: Under "Appendices", the titles for Appendices E and F are not consistent with those listed in the Table of Contents.	Acronym for Appendix E Biological Assessment (BA) and Appendix F Essential Fish Habitat (EFH) were added to the titles.
230	Town of Palm Beach	CSI / Penny Cutt	2.0 Project Alternatives: See comment under "Executive Summary - Section E - Description of Action Alternatives". A section should be added to explain that the selected beach nourishment alternative will be evaluated immediately prior to construction with updated coastal engineering analyses. The ETOF estimates will be recalculated and updated based on beach profile and hardbottom surveys. The beach fill will be adjusted, accordingly, to maintain the Project's permitted temporary and permanent hardbottom impacts. This section should also discuss how the selected beach nourishment alternative will account for inlet bypassing or other beach management projects on updrift beaches in the Town. The effects of these other beach management projects, which may be constructed before or after the proposed Project, must be evaluated in terms of anticipated hardbottom impacts. Beach fill design should be modified accordingly, as sediment transport from recently completed projects could increase both temporary and permanent hardbottom impacts.	The bullets were reordered to present the Town of Palm Beach first. Text was added in 2.0 to indicated that sand volumes will be adjusted based on pre-construction beach profile and hardbottom surveys. Projects constructed updrift of the proposed project are addressed in Appendix J Cumulative Impacts Assessment. Although bypassing is discussed in Appendix J, more detail about its contribution to Cumulative Effects was added to Table 7-1.

231	Town of Palm Beach	CSI / Penny Cutt	Sections 2.3.3-2.3.9 and 2.3.13-2.3.14. These sections indicate that the referenced alternatives will not achieve a three-year nourishment interval. Although these alternatives are not likely to meet the Corps Overall Project Purpose, a three-year nourishment interval is not currently defined in the Corps Overall Project Purpose (see 1.5.2.2, above).	The applicants have stated a desire to conduct maintenance renourishment at a four year interval in the Town of Palm Beach and a three year interval in the County. This is presented in Section 1.4 Description of Proposed Action and stated in Section 1.5.2. USACE Interpretation of the Applicants' Project Purpose and Need Statement.
232	Town of Palm Beach	CSI / Penny Cutt	There is no subsection discussing the evaluation of the alternative "Use of Non-Domestic Sand Source" to determine whether it has the potential to meet the project purpose and indicating why it was eliminated from further consideration.	This bullet was mistakenly left in Section 2.3 although discussion of non-domestic sand sources was deemed unecessary during initial review of the DEIS by the USACE.
233	Town of Palm Beach	CSI / Penny Cutt	Placement of sand from barge should be considered to allow flexibility in construction means/methods. Material can be hydraulically placed and the potential for an appropriate pipeline corridor and/or use of floating pipeline should be considered.	It is acknowledged that this may provide more flexibility in construction, however, neither applicant has stated their intent to use this methodology.
234	Town of Palm Beach	CSI / Penny Cutt	2.3.9 Seawalls and Revetments: This Section states "The effects of additional seawall and revetment construction could in fact result in substantial environmental impact and economic loss to the area." The DEIS should clarify how armoring the remaining 14% of unprotected shoreline would result in substantial environmental impact and economic loss.	Language was added to clarify how environmental and economic resources could be affected.
235	Town of Palm Beach	CSI / Penny Cutt	2.3.14 Transport of Offshore Borrow Area Sand via Onshore Pipeline: Transportation of the stockpiled sand utilizing hydraulic methods should be considered. Small hydraulic cutterhead dredges have been utilized successfully for beach fill placement projects and have been used in the past for backpassing projects. The inclusion of flexibility in the project specifications and environmental permit conditions is recommended to facilitate construction means/methods and to maximize competitive construction bids.	See response to Comment #233.
236	Town of Palm Beach	CSI / Penny Cutt	2.4 Alternatives Evaluated in Detail: *2.4.2 Alternative 2- The Applicants' Preferred Alternative: Beach and Dune Fill with Shoreline Protection Structures:* This Section states "Exact location and length of the groins will depend on the presence of nearshore hardbottom resources at the time of construction, but it is currently estimated that they will be approximately 90 ft long and spaced approximately 300 ft apart." Is a specific buffer proposed between the groins and hardbottom? Where is the anticipated impact associated with the groins quantified or depicted in the DEIS? The engineering design basis for the proposed groin spacing does not appear to be presented in the DEIS. Were potential hardbottom impacts/minimization of impacts considered in the design, or is the preliminary design based solely on shoreline stabilization performance optimization?	The groins designed did not consider a buffer between groins and hardbottom, although during the construction the length and location and be better defined depending on the hardbottom resources. The project was modeled for impacts with the groins and the sand placement. Impacts are not differentiated between the two since the groins are designed within the beach fill template. The design of the groins is based on shoreline stabilization performance optimization.
237	Town of Palm Beach	CSI / Penny Cutt	Figure 2-2: This Figure depicts the limits between the Town of Palm Beach and the Town of South Palm Beach, but does not depict the limits between the Towns of South Palm Beach, Lantana, or Manalapan.	The color of the boundary line in Figure 2-2 between the Town of Palm Beach and South Palm Beach was changed and defined in the legend as the boundary between the Town of Palm Beach Project Area and the Palm Beach County Project Area (which includes the Towns of South Palm Beach, Lantana, or Manalapan).
238	Town of Palm Beach	CSI / Penny Cutt	2.4.3 Alternative 3- The Applicants' Preferred Project without Shoreline Protection Structures: This Section states that "It is anticipated that this project would provide sand to the system, reduce the potential effects of storms on the existing beach and adjoining infrastructure, provide benefits to nesting sea turtles, impact nearshore hardbottom resources, and enhance the sustainability of existing seawalls. It is estimated that the life expectancy of this project will be between 2 to 4 years within the Town of Palm Beach." The other alternatives in Section 2.4 do not address impacts to existing seawalls and this is not listed as part of the Project goals. This should be clarified and/or explored for each Alternative presented.	The Town of Palm Beach's stated purpose and need includes "...use cost effective beach fill placement and/or coastal protection structures when environmentally possible, which may enhance stability to existing seawalls…" See revisions in Section 1.5.1.

239	Town of Palm Beach	CSI / Penny Cutt	2.4.5 Alternative 5 - *The Town of Palm Beach Increased Sand Volume Project and County Preferred Project:* The summary presented in this Section does not specifically identify whether the Project goals would be met like the previous alternatives do (i.e. benefits to sea turtles, nearshore hardbottom, seawall sustainability, storm surge impact on infrastructure, sand to the system, 3-year nourishment interval, etc.) All Alternatives in Section 2.4 should be reviewed to consistently address each stated Project goal.	Text was added Section 2.4.5. to be consistent with the other sub-sections in Section 2.4.
240	Town of Palm Beach	CSI / Penny Cutt	2.4.6 Alternative 6 - *The Town of Palm Beach Increased Sand Volume Protect and County increased Sand Volume Project without Shoreline Protection Structures:* For consistency with prevailing document formatting, the Town should come before the County when describing where the additional sand would come from.	See response to Comment #239
241	Town of Palm Beach	CSI / Penny Cutt	2.5 General Description of Project Construction: This Section indicates that the only processing that the sand dredged from offshore may go through is screening at the nourishment site; however, screening on board the dredge is also an option that should be considered. Please elaborate on why it is anticipated to take three times as long to place 75,000 cy of sand within the County fill template as it will to place 75,000 cubic yards of sand within the Town fill template. Since all material will be stockpiled, either on the beach or at the mine, and trucks can be scheduled or staged, we would expect these rates to be relatively comparable.	Text revised to acknowledge fill material from offshore sand sources may be screened during dredging and sand placement. The rates presented are based on performance rates provided by the Town and County for previously constructed projects. The differences in production rates are partially attributed to the proximity of the sand sources to the Project Area.
242	Town of Palm Beach	CSI / Penny Cutt	2.5.2 Upland Sand Source: This section states that " .. .it may be useful to employ offsite truck waiting areas to avoid congestion at the access points." Have offsite truck waiting areas been utilized for previously constructed truck haul projects within the Project area? Where were those waiting areas located? Would they be proposed or modified for this Project? Where these offsite waiting areas considered in the Scope of Analysis? The mine production capacities need to be carefully reviewed in terms of the required daily production to complete the proposed Project during the optimum construction period (prior to marine turtle nesting season). Most mines cater to larger customers for aggregate and concrete production, as beach nourishment tends to be a significantly small market for these mines. The large scale truck haul project constructed in Indian River County was completed over three years. Depending on the construction schedule, multiple sand sources may be required and the possibility of constructing one of the alternatives over multiple winter seasons can be evaluated.	Waiting areas have been incorporated into the text in Section 2.5.2.
243	Town of Palm Beach	CSI / Penny Cutt	Figure 2-4 Upland Sand Mines with Potentially Feasible Sources of Material that could be considered for a Truck-haul Project for Placement in the Proposed Project Area: The references to Figure 2-4 on Page 2-29 and in Table 2-2 both list 15 mines; however, Figure 2-4 only depicts 13 mines.	Figure 2-4 was revised based on input from both applicants regarding preferred upland mines.
244	Town of Palm Beach	CSI / Penny Cutt	2.5.3 Construction Best Management Practices: Would the Water Quality Monitoring Plan include controls for temporary staging methods, dewatering, effluent control, etc. for hauled and/or dredged sand? If not, what Best Management Practices (BMP) would address these construction operations with the potential to affect the environment?	It is anticipated that the water quality monitoring plan would pertain the construction activities at the Project Area regardless of the sand source.
245	Town of Palm Beach	CSI / Penny Cutt	3.0 Affected Environment: 3 .1 Scope of the Affected Environment: This Section states that "This area includes the nearshore marine environment from the dune seaward out to a distance of approximately 400 meters in order to include all areas of nearshore hardbottom habitat that have been exposed between 2003 and 2013." Up to this point, the DEIS referred to all English units; this is the first metric unit presented in the DEIS. References to units of measurement should be consistent.	All chapters and appendices were reviewed for consistency of units of measure.
246	Town of Palm Beach	CSI / Penny Cutt	Figure 3-1 Regional Location Map Southern Palm Beach Island Comprehensive Shoreline Stabilization Project: This Figure calls out "Matchline Lower Left Panel" and "Matchline Upper Right Panel". This is somewhat confusing and could perhaps simply be labeled "Matchline". Additionally, a page number needs to be added to this page.	Matchline remains as is. Page number will be added to this page in the FEIS.

247	Town of Palm Beach	CSI / Penny Cutt	3.2 General Environmental Setting: *Table 3-1 Palm Beach Island Shoreline Reach Designation (FDEP, 2013).* Reach 1 extends to R-78+500 but Reach 2 starts at R-78; this should be corrected. Reach 8 ends at "Town of Palm Beach southern limit" but Reach 9 starts at "La Bonne Vie"; this should be clarified.	Reach 2 southern limit was corrected to R-78+500. The northern boundary of Reach 9 was edited to start at the Town of Palm Beach southern boundary.
248	Town of Palm Beach	CSI / Penny Cutt	3.2.2 Physical Conditions: 3.2.2.2 Dry Beach: This Section states that "dry beach" is defined " ... as the zone of unconsolidated material that extends landward from the Mean Low Water (MLW) line to the place where there is a marked change in material or physiographic from [form], or to the line of permanent vegetation." However, per Section 62B-41.002(5), F.A.C., this is the definition of "beach" not "dry beach".	The description of "dry beach" was changed to: "The dry beach is located between the toe of the dune or scarp and the MHW line."
249	Town of Palm Beach	CSI / Penny Cutt	3.2.2.4 Nearshore Hardbottom: This is the first presentation of the range of exposed nearshore hardbottom areas between 3.06 ac in 2009 and 51.20 ac in 2006. There is no indication of how the time averaging of exposed hardbottom was conducted. There is also no indication of the cumulative area of hardbottom that has been exposed within the Project Area. This cumulative area would likely be the total acreage of ephemeral hardbottom with the potential to be exposed in the reasonably foreseeable future, given that it had been exposed within the past ten years. The DEIS should present this information to accurately evaluate potential ecological effects of the Project. Units (acres) should be added to all values in this Section and the DEIS. "SD" is assumed to mean Standard Deviation. This abbreviation is not listed at beginning of the document or prior to the first instance of use. The "SD" label is missing for Reach 10 in this Section. This Section states that "between 2000 and 2012 ... ". However, Page 3-7 states "between 2003 and 2013 ... " The evaluated years should either be consistent or the document should clarify why the referenced time period ranges are not the same. Calculations were clearly made to quantify areas of exposed hardbottom, so the data should be available for this entire time series.	An explanation of the time averaging methodology was inserted under Section 4.4. This section has now been referenced in Section 3.2.2.4. Although the details of time average are presented later in the document, Section 4.4 is a more appropriate location for this discussion. Assuming cumulative area of hardbottom means the maximum extent of exposed hardbottom, this was calculated and inserted into Section 3.2.2.4 along with the amount of persistent hardbottom in the Study Area. Units (ac) were added. SD was added to the abbreviation list. In the DEIS, the 2002-2012 timeframe was referenced from the BMA where averages were presented. This section was deleted to avoid confusion between average and time-average.
250	Town of Palm Beach	CSI / Penny Cutt	Figure 3-2: Nearshore hardbottom and dune resources within the Study Area (R-127 to R-141+586). Figure 3-2 is too small to adequately review. This Figure should include zoomed-in sections with matchlines. Why is this Figure only presenting the hardbottom delineations for four years? The four years selected for presentation do not include the 2009 (minimum exposed hardbottom) or 2006 (maximum exposed hardbottom). If these years were purposefully excluded, this should be clearly noted.	Figure 3-2 was enlarged and presented as split panels over 2 11x17 sheets. Matchlines are included. Only four years were originally chosen for visual ease; however, five years are now presented on Figure 3-2 and include 2003, 2006, 2009, 2012 and 2014.
251	Town of Palm Beach	CSI / Penny Cutt	This Figure does not show the Town limits between the Towns of South Palm Beach, Lantana, and Manalapan, but does show the Town limits between the Town of Palm Beach and the Town of South Palm Beach. These borders should be added.	See response to Comment #237.
252	Town of Palm Beach	CSI / Penny Cutt	Table 3-3 Exposed hardbottom acreage delineated from aerial imagery between 2003 and 2013 in the Study Area (R-127 to R-141 + *586) :* This table should present the month that the aerials were flown, as seasonality affects hardbottom exposure, as well as potential resource coverage. The only year with months presented is 2010. Specifically, although more hardbottom may be exposed during winter months, the ecological function and value of this resource is likely lower during the winter months, as more storms scour the ecological resources off the hardbottom. We recommend that the DEIS include a section on hardbottom seasonal variability, as well as the methodology utilized to time average the hardbottom polygon utilized for impact determinations during modeling of alternatives.	Months were added to all dates in Table 3-3. Although much variability in exposed hardbottom exists between years, most of the aerial photographs were taken in the summer months, therefore no obvious trend in seasonal variability could be determined. Section 4.4 was revised to include details on the time-average methodology.

253	Town of Palm Beach	CSI / Penny Cutt	3. *2.3 Waves:* This Section states "Figure 3-3 presents a wave rose from 1980-1999 Wave Information Studies (WIS) Station 63461, which is located offshore of the Study Area in 356 m (1168 ft) water depth." The USACE WIS station data time series has been extended from 1980-2012 and has been available online for at least 6 months. We recommend an update of Section 3.2.3 and Figure 3-3 with the most recent data	Figure 3-3 and the corresponding text was updated with the most recent WIS station data.
254	Town of Palm Beach	CSI / Penny Cutt	3.2.6 Shoreline Erosion and Accretion: This Section should explain that the Reach 7 and Reach 8 boundaries have been adjusted to better address the characteristics of each Reach. This explanation should define the previous and current limits of each Reach by R monument with respect to when past projects were constructed and when the boundary change was implemented. This Section states "Since 1990, Reach 8 has exhibited a net average loss of 10.8 feet, though gains generally occurred at the north end of the reach and recession was evident at the southern boundary." Please clarify whether the 10.8 feet loss was of dry beach width. This Section states "Although the reach has recently exhibited net gains, the volumetric changes typically vary by R-monument with losses occurring at and south of the pier (R-128 to R-129) and at R-131." Please clarify whether this statement is referring to the Lake Worth Pier. This Section states "Trough elevations are on the order of -5 to -12 feet NA VD, with the deeper troughs located near the south end of the Project Area. Bar elevations are on the order of -10 to - 5 feet NAVD, with the shallower bars located near the north end of the Project Area." The presentations of depths should be consistent, with presentation of the shallower depth first. (i.e.-5 to -12 feet NAVD, and -5 to -10 feet NAVD). This Section states "From 2008 to 2012, the section of shoreline from R-135 to R-138 has lost 14,200 cy of sand per year with the greatest losses at R-136. From R-138 to R-141, there was a gain of 9,300 cy of sand with the greatest gains at R-141." Is the 9,300 cy gain a total for 2008 to 2012 or a per year value, as was presented for the area between R-135 and R-138?	The current reach boundaries are defined in Table 3-1 and the previous limit for Reach 8 is defined within this paragraph. Section 3.2 provides the history and evolution of the reach designations. The pier was clarified as the Lake Worth pier. The order of depths was updated to present the shallower depth first for consistency. Values presented were clarified if they represent total or average changes.
255	Town of Palm Beach	CSI / Penny Cutt	Table 3. *5. Palm Beach (Reach 8) summary of sediment data (ATM. 2010):* We recommend adding a note explaining that there is no data for R-128 because this monument is located within the City of Lake Worth Beach.	A note indicating R-128 is located in the City of Lake Worth was added to the caption.
256	Town of Palm Beach	CSI / Penny Cutt	3.2. 7 *Sea Level Change:* Sea level change data from approximately 1930 to 1982 was analyzed to assess change at the Project site. Sea level change has been under increased scrutiny in the past 30 years and any assessment should include data from 1982 to present, if available. Please clarify whether the sea level change data was incorporated into the overall analysis, or it was determined to have a negligible effect for the Project?	Two stations are still included in the EIS. The Miami station sea level data is only available from 1931 to 1981. The Daytona station was removed and the Lake Worth Pier station was added, which has data from 1970 to 2014. Text was added to discuss the inclusion of sea level rise within the Study.
257	Town of Palm Beach	CSI / Penny Cutt	Figure 3-5. Mean Sea Level Trends in Miami Beach and Daytona Beach (NOAA, 2013a): The legend is not clear at 100% scale.	Figure 3-5 was updated with recent/better image quality graphs.
258	Town of Palm Beach	CSI / Penny Cutt	3.2.*8 Geology/Sediment Characteristics:* This Section presents sand samples from a 2010 ATM report for the Project area with a composite mean grain size diameter of 0.43 mm for the Project site. Appendix G-3 states that sand samples collected by Palm Beach County in 1993 were used for the DELFT3D modeling, specifically the 0.36 mm mean grain size diameter. Appendix G-1 states that sand samples collected in 2006 by CPE confirm a native grain size diameter of 0.3 mm with coarser sand measuring 0.45 mm based on a 2012 ATM report. The analyses should remain consistent, where applicable, and it should be clarified why the most recent sediment data was not utilized for the modeling. Further, it should be clarified why new samples were not collected to obtain a current sediment profile based on subsequent beach profile change.	The County provided updated sediment data collected near R-135 in September 2015. This data was added to Table 3-5, but was not available at the time that the modeling studies were inititated. A grain size of 0.36mm was used for the Delft3D modeling studies. A grain size of 0.30mm was used for the initial SBEACH modeling, but revised to 0.36mm for the additional SBEACH modeling within the Town for consistency with the Delft3D modeling studies.

259	Town of Palm Beach	CSI / Penny Cutt	Figure 3-6 Geologic Map of Southern Florida depicting the Epochs and Corresponding Formations (ICS, 2013; Scott et al., 2001): The abbreviation MY A for Million Years Ago is not in the Table of Contents List of abbreviations or on the Figure Notes; please add this reference.	MYA was added to the list of abbreviations and a note was added to the Figure 3-6 caption.
260	Town of Palm Beach	CSI / Penny Cutt	3.4.1.2.3 Leatherback Sea Turtles: This Section states that "Leatherbacks deposited 253 nests in the County in 2013, which was slightly below the previous 15-year average of 324 nests." As 253 is 22% below 324, the wording should be revised to remove "slightly".	This section was updated with more recent (2014 and 2015) nesting data. The number of nests deposited in 2014 was higher than the previous 16-year average.
261	Town of Palm Beach	CSI / Penny Cutt	3.4.6.2 Orbicella annularis Complex *(0. annularis, 0. faveolata, and 0. franksi) , Dendrogyra cylindrus, and Mycetophyllia ferox:* We suggest adding a discussion to this Section explaining when and why the *Montastrea* genus was changed to the *Orbicella* genus.	A reference to the Budd et al. (2012) paper was added.
262	Town of Palm Beach	CSI / Penny Cutt	**4.0 Environmental Consequences:** 1 Introduction: The last sentence of the first paragraph is unclear. This sentence should read "The No Action Alternative considers the environmental conditions in the affected regions without the Proposed Action; therefore, representing the status quo condition."	Text revised as recommended.
263	Town of Palm Beach	CSI / Penny Cutt	4.1.1.1. Geographic Scope: This Section states "The direct and indirect effects associated with some of the alternatives are expected to extend beyond the Project construction limits due to potential downdrift impacts to the shoreline from the groins and the addition of sand to the littoral system. For those aspects of the affected environment which can be assessed in an area-specific context (i.e., turtle nesting habitat, dune vegetation, nearshore hardbottom), the geographic scope of direct and indirect effects analysis includes the Project Area as well as adjacent areas to the north and south and the nearshore marine environment which may be impacted by the evaluated alternatives." The first sentence states that direct and indirect effects are expected to extend downdrift, but the second sentence states that direct and indirect effects analysis includes areas to the north and south. These should be consistent and both reference impacts to areas updrift and downdrift of the construction area.	Text revised to include updrift.
264	Town of Palm Beach	CSI / Penny Cutt	*4.1.4 Detail of Analysis:* Transportation should be evaluated in more detail since there will clearly be an impact to local roads due to increased traffic from delivery of 75,000 cy of sand to the Town at least every four years and 75,000 cubic yards to the County at least every four years for the 50 year timeframe being evaluated for the DEIS.	See response to Comment #214.
265	Town of Palm Beach	CSI / Penny Cutt	4.1.5 Modeling Efforts: 4.1. 5.1 Storm Protection: This Section states "The level of storm protection during the 5, 15, 25, 50, and 100 year return period storm events was analyzed using the Storm Induced Beach Change Model" and "The IH2VOF model was used to evaluate the amount of overtopping during the 15, 25, and 50 year return period storm events." It should be clarified why the 5-year and 100-year return period storm events were not evaluated for overtopping. It is briefly addressed on Page 14 of Appendix G by stating that "The existing beach conditions are susceptible to wave overtopping during 15, 25 and 50 year return period storms." This can likely be addressed by clarifying that seawalls are not overtopped during 5-year and/or submerged during 100-year storm conditions.	The 100-year storm was run and clarification was provided in Chapter 4, Section 4.1.5.1 Storm Protection. Revisions were also made accordingly in Sub-Appendix G-2 IH2VOF Modeling Report.

266	Town of Palm Beach	CSI / Penny Cutt	4.1.5.2 Potential Hardbottom Impacts: This Section states "An analytical equilibrium toe of fill (ETOF) was determined ... " The following paragraph makes reference to "the profile translation theory". Was the analytical ETOF determined using the profile translation method? This should be clearly stated. This section states that " ... cross-shore fill equilibration is not instantaneous as the profile translation theory suggests because sand migrates alongshore due to background erosion and littoral transport." This Section goes on to state that " ... the reasonably anticipated extent of hardbottom impacts is accounted for in the analytical estimation of the ETOF and the DELFT3D model results." This Section should explain that the profile translation method represents the worst case scenario in which all material moves cross shore and no material moves alongshore and that the DELFT3D model takes alongshore movement of sand (littoral drift) into consideration. The analysis should be confirmed to meet the requirements of the guidelines of the June, 2005 ETOF Study compiled by the DEP. Estimates of the ETOF and the resulting calculations of the anticipated temporary and permanent hardbottom impacts should appropriately reference the variability and limitations of the ETOF estimates. The DEP Study states " ... there is no error free method to assess the location of the toe of a fill in equilibrium (ETOF location) ... Engineering methods (although far from being perfect) do exist to approximate an equilibrium beach profile."	Text was revised to clarify analysis of the ETOF.
267	Town of Palm Beach	CSI / Penny Cutt	4.2 Vegetation: Is dune planting proposed in association with any of the evaluated alternatives? This information should be presented for consideration of ecological impacts. The discussion on most of the alternatives indicates that these options would protect and enhance dune vegetation; however, the text does not indicate how or why dune vegetation would be protected or enhanced as a result of each project alternative.	The Town and the County both plan to plant the dune.See Section 5.1.3.1.
268	Town of Palm Beach	CSI / Penny Cutt	4.3.1.1.1 Nesting Habitat: We recommend adding a discussion about false crawls due to lack of beach nesting habitat.	Text was added to Section 4.3.1.1.1 citing literature that supports an increase in false crawls due to continued erosion and lack of nesting habitat.
269	Town of Palm Beach	CSI / Penny Cutt	4.3.2.1.1. Please add a discussion about the potential for a nesting turtle to dig an encounter a structure, resulting in a false crawl.	Revised text (section 4.3.2.1.1).
270	Town of Palm Beach	CSI / Penny Cutt	4.3.2.1.2. The first sentence states "Because the Project proposes to utilize an upland sand source and truck-haul approach for beach construction, minimal or no in-water work will be required." However, the Town project proposes to utilize an offshore sand source that will be stockpiled in the uplands so it is available for this Project. This should be clarified, as the first sentence is somewhat misleading, indicating that the sand is originating from an upland source, as opposed to an offshore borrow area. The clarification should indicate that the effects of dredging and stockpiling this offshore sand were considered under a different Corps authorization. This Section states "The permanent impact comprises approximately 16% of the nearshore hardbottom habitat, and the secondary and temporary impacts affect approximately 32% of the nearshore hardbottom habitat (based on a 10-year time average) within the Study Area." The methodology for time averaging hardbottom exposure is not included within the document and is a critical element of the NEPA evaluation of this Project.	The first sentence was revised to remove "...an upland sand source and...". Additionally, a clarification statement was added: "As mentioned earlier, the stockpile of dredged material will be obtained from dredging sand from offshore borrow areas associated with Phipps, federally authorized under DA Permit No. SAJ-2000-00380 , and with the Mid-Town Project, authorized under DA Permit No. SAJ-1995-03779 and authorized under the Palm Beach Island Beach Management Agreement (BMA) (FDEP, 2013). Therefore, detailed analyses on the effects of dredging were conducted under the federal authorization processes for these projects. " Section 4.4 was revised to include details on the impact assessment conducted in GIS using the Delft3D modeling results and the time-average methodology.

271	Town of Palm Beach	CSI / Penny Cutt	4*. 3.2; 4.3.2.6; 4. 3.3 Alternative 3 - The Applicants' Preferred Project without Shoreline Protection Structures* **This section title is different in the Table of Contents and in the Text***; 4. 3.3. 6; 4.3.4; 4.3 . 4.6; 4.3.5;4 . 3. 5. 6; 4.3.6; 4. 3. 6. 6 .* These Sections state " ... this reef could provide potential substrate for Acropora colonization ... " The following text should be added " ... and the five recently listed coral species." Each of these Sections also refers to mitigative artificial reef"habit" instead of"habitat".	Text revised as recommended.
272	Town of Palm Beach	CSI / Penny Cutt	4.4 Hardbottom: *4.4.2 Alternative 2 - The Applicants' Preferred Project: Beach and Dune Fill with Shoreline Protection Structures:* Once an ecological impact is permitted and effectively mitigated, future nourishment events do not require additional mitigation, provided no new ecological impacts are proposed. The DEIS proposes nourishment every 3 years based upon the modeled Project design life. Since the intent of the Project is to perpetually provide shore protection by maintaining beach fill within the ETOF, it is in the Applicant's best interest to fully offset all aquatic ecological functions and values that will be lost within this area prior to or concurrent with Project construction to minimize time-lag. If the ecological value of these resources is not fully offset with compensatory mitigation, the environmental regulatory agencies may require additional compensatory mitigation after completion of Project monitoring, which would be subject to time lag calculations. The added time lag to account for 5 years between Project construction and completion of monitoring can add significant cost to the Project. The DEIS indicates that a time averaging process was applied to 10 years of data to quantify impacts to hardbottom resources. Will a similar time averaging process be applied to the mitigation reef to ensure that it is providing sufficient compensatory mitigation at the end of the monitoring period or over a ten year time period in which exposure is time averaged?	See response to Comment #81. It has not been determined if a time average process will be applied to the mitigation reef to determine that it is functioning as intended.
273	Town of Palm Beach	CSI / Penny Cutt	4.4.4.1 Burial of Exposed Nearshore Hard bottom: This Section states that 'The elimination of the seven low profile groins ... would not change the potential impact to hardbottom resources caused by beach nourishment." If the project is only anticipated to last one year without structures, then it is likely that more sand would be added to the system on an annual basis. Presumably additional hardbottom resource impacts would result from the cumulative volume of sand associated with subsequent nourishments on a more frequent basis.	The Town of Palm Beach has stated a desired maintenance interval of four years and the County has stated a desired maintenance interval of three years. It has not been suggested by either applicant that they would renourish more often.

274	Town of Palm Beach	CSI / Penny Cutt	4. 4.5.2 Turbidity: This Section includes the County Preferred Project, which includes structures, yet it states "The elimination of the seven low-profile groins between R-134 to R-138+551 would not change the potential impact to turbidity caused by beach nourishment." This statement should be revised accordingly.	This statement was deleted.
275	Town of Palm Beach	CSI / Penny Cutt	4.4.6.1 Burial of Exposed Nearshore Hardbottom: This Section states that the elimination of structures would not change the potential impact to hardbottom resources caused by beach nourishment. However, if the project life is reduced to one year and the DEIS is evaluating impacts over a 50-year period, more frequent nourishment would be required, potentially on an annual basis. This more frequent nourishment would likely increase the potential for cumulative impacts to hardbottom resources.	See response to Comment #273
276	Town of Palm Beach	CSI / Penny Cutt	4.5 Fish and Wildlife Resources: This Section should reference the direct and indirect impacts proposed by each alternative.	Revisions made where appropriate.
277	Town of Palm Beach	CSI / Penny Cutt	4. *5.2.3 Turbidity; 4 . 5.3.3 Turbidity; 4 . 5.4.3 Turbidity; 4. 5 5.3 Turbidity; 4 . 5.6.3. Turbidity* - The Sections on Turbidity should speak to both construction-related turbidity and equilibration related turbidity.	Text was revised to indicate that turbidity is anticipated to return to ambient levels immediately following construction.
278	Town of Palm Beach	CSI / Penny Cutt	4.6.2.1 Alteration/Burial of Exposed Nearshore Hardbottom: The proposed mitigation should be quantified.	Mitigation acreage was added as recommended.
279	Town of Palm Beach	CSI / Penny Cutt	4.6.2.3 Turbidity: The Section on Turbidity should speak to both construction-related turbidity and equilibration related turbidity.	See response to Comment #277.
280	Town of Palm Beach	CSI / Penny Cutt	4.6.3.1 Alteration/Burial of Exposed Nearshore Hardbottom: The proposed mitigation should be quantified.	See response to Comment #278.
281	Town of Palm Beach	CSI / Penny Cutt	4.*6.3.3 Turbidity:* The Section on Turbidity should speak to both construction-related turbidity and equilibration related turbidity.	See response to Comment #277.
282	Town of Palm Beach	CSI / Penny Cutt	4. 6.4.1 Alteration/Burial of Exposed Nearshore Hardbottom: The proposed mitigation should be quantified.	See response to Comment #278.
283	Town of Palm Beach	CSI / Penny Cutt	4.6.4.3 Turbidity: The section on Turbidity should speak to both construction-related turbidity and equilibration related turbidity.	See response to Comment #277.

284	Town of Palm Beach	CSI / Penny Cutt	4. 6.5.1 Alteration/Burial of Exposed Nearshore Hardbottom: The proposed mitigation should be quantified.	See response to Comment #278.
285	Town of Palm Beach	CSI / Penny Cutt	4. 6. 5. 3 Turbidity: The section on Turbidity should speak to both construction-related turbidity and equilibration related turbidity.	See response to Comment #277.
286	Town of Palm Beach	CSI / Penny Cutt	4. 6. 6.1 Alteration/Burial of Exposed Nearshore Hardbottom: The proposed mitigation should be stated and quantified.	See response to Comment #278.
287	Town of Palm Beach	CSI / Penny Cutt	4. 6. 6. 3 Turbidity: The section on Turbidity should speak to both construction-related turbidity and equilibration related turbidity.	See response to Comment #277.
288	Town of Palm Beach	CSI / Penny Cutt	4.7 Offshore Borrow Area Resources: This Section states that "The effects of the dredging are evaluated in this assessment and the utilization of the dredging sand as a source of beach compatible sand is considered a cumulative action to the town of [Palm] Beach portion of the Project." However, this Section does not adequately evaluate the effects of the dredging and the document specifies in numerous other locations that dredging is being evaluated under the Phipps and Midtown permit evaluations and not by this DEIS. We agree it is appropriate to reference the evaluation of dredging conducted under the Phipps and Midtown permit evaluations; however, it is not appropriate to indicate that the effects of the dredging are being evaluated in this Section when they are not. This Section also references 75,000 cy of fill in the proposed Project; however, one of the alternatives being evaluated considers up to 96,000 cy of fill for the Town's portion of the Project. The effects of dredging the additional volume of sand, during each nourishment event, over a 50 year period, must be considered with respect to the extended duration of dredging, dredge production rates, and the corresponding ecological effects. As NEPA requires an EIS to disclose the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, as well as any irreversible and irretrievable commitments of resources resulting from implementation of the proposed action pursuant to 42 U.S.C. 4332(2)(c) and 40 CFR 1508.11, these effects must be considered and presented in the DEIS.	Revisions made indicated that dredging sand from offshore borrow areas are discussed in this EIS but not comprehensively evaluated. The effects of dredging the excess volume of sand needed to fill the template of the permitted alternative for this project will be evaluated during the permitting process for Phipps and/or Mid-Town, and will consider the additional duration of dredging needed and corresponding environmental impacts.
289	Town of Palm Beach	CSI / Penny Cutt	4.9 Water Quality: This Section should speak to turbidity due to beach equilibration after each nourishment event.	See response to Comment #277.
290	Town of Palm Beach	CSI / Penny Cutt	4.12 Noise: This Section should speak to the noise associated with sand placement versus the noise associated with groin construction. This Section should also address vibration monitoring.	Texted revised to acknowledge vibration impacts.
291	Town of Palm Beach	CSI / Penny Cutt	4.17 Socioeconomics: This Section should reference the increased tax base associated with annual property value increases.	The text was revised to include the economic impact of a potential decrease in property value and the associated decrease in tax revenue if the No Action Alternative is selected.
292	Town of Palm Beach	CSI / Penny Cutt	4.18 Public Safety: The Global Shark Attack File website recommendations for preventing shark bites include avoiding murky or turbid water because "Some species of sharks hunt in murky or turbid water, others may bite because of stress, and others may simply fail to recognize an object and bite to find out what it is. It is also difficult to defend yourself from something you cannot see." This Section should reference the slightly higher likelihood of shark bites during turbid conditions while the beach is equilibrating after each nourishment event.	
293	Town of Palm Beach	CSI / Penny Cutt	4.20 Natural or Depletable Resources: This Section references "The 150,000 cubic yards of sand that will be used as a source of beach/dune fill from an upland mine ... " However, throughout the document, the Town portion of the Project proposes to use stockpiled sand from an offshore borrow area. This statement should be corrected.	Sand from offshore borrow areas was added as a nonrenewable resource.

294	Town of Palm Beach	CSI / Penny Cutt	4.28.1.1 Past Conditions and Activities: This Section should also discuss the beneficial and detrimental effects of beach nourishment on nesting turtles.	Beneficial and detrimental effects of beach nourishment on nesting turtles is discussed in detail in Section 4.3.
295	Town of Palm Beach	CSI / Penny Cutt	4.28.1.2 Present and Ongoing Activities: This Section should reference implementation of the manatee construction conditions during all in water activities.	A reference to FWC Standard Manatee Construction Conditions for In-Water Work was added.
296	Town of Palm Beach	CSI / Penny Cutt	4.28.2.2 Coral Reef and Hardbottom Resources: This Section should quantify proposed mitigation and reference ranges of direct and indirect impacts from all alternatives, as well as ranges of required mitigation.	Table 4-1 in Section 4.4.2.1 provides the impacts and mitigation required for each alternative based on direct and indirect impacts.
297	Town of Palm Beach	CSI / Penny Cutt	4.28.2.3 Fish and Wildlife Resources: This Section states that there will be no significant impact to benthic infauna; however, project maintenance is anticipated to occur at least every four years and the DEIS and referenced literature state that it takes nine months to four years for infauna to recolonize an area. The cumulative effect of this Project, combined with other local nourishment projects, should be considered with respect to nearshore infaunal communities.	The text was revised to include the correlation between habitat stability (stable unstressed habitat vs. dynamic stressed habitat) and recovery rates of infauna.
298	Town of Palm Beach	CSI / Penny Cutt	4.28.2.4 Essential Fish Habitat: A discussion about the proposed mitigation reef should be added here. It should discuss whether the reef is anticipated to be persistent or ephemeral. Additionally, infauna will be lost for 25-100% of the time in this area due to anticipated maintenance events at least every four years. This Section should be expanded to address cumulative effects associated with regional hardbottom losses.	Revised text as described in Comment #297.
299	Town of Palm Beach	CSI / Penny Cutt	4.30 Unavoidable Adverse Environmental Effects: This Section refers to a "temporary loss of benthic communities in the nearshore area"; however, the Project is anticipated to be nourished at least every four years (3 year intervals assumed in the UMAM assessment) and some of the impacts are considered permanent. Additionally, impacts to infaunal communities in the area will be more significant due to the nourishment frequency. This Section should more accurately describe the anticipated temporary loss of benthic communities with respect to infaunal community recolonization rates.	Revised text as described in Comment #297.
300	Town of Palm Beach	CSI / Penny Cutt	4.33 Compatibility with Federal, State, and Local Objectives: This Section should include reference the Coastal Element of the Town's Comprehensive Plan and the Coastal Element of the County's Comprehensive Plan and discuss the Project's consistency with each.	Descriptions of the Town of Palm Beach's Comprehensive Coastal Management Plan (CCMP) and the County's Coastal Management Element were added.
301	Town of Palm Beach	CSI / Penny Cutt	4.36 Precedent and Principle for Future Actions: Dune restoration does not provide precedent for beach fill or structure construction as asserted in the first sentence of this Section. However, there is precedent for both beach fill and structure construction in southeast Florida that should be referenced here. This Section should also reference the likelihood that future nourishments will be authorized, recognizing the potential for minor deviations to address unanticipated results of the previous nourishment event.	Text was revised for clarification and as recommended.

302	Town of Palm Beach	CSI / Penny Cutt	5.0 **Mitigation:** From a federal perspective, "mitigation" includes avoidance, minimization, and compensation. As this is a NEPA document, references to "minimize and mitigate" in this Section should be corrected. This Section should explain how hardbottom was quantified given the extreme variability of exposure over time within the Project area. There is no presentation on how hardbottom impacts were "time averaged". This is a critical element of this DEIS evaluation. Throughout the document the time averaged acreage is used to quantify impacts to hardbottom; however, one must first establish an agreement that the time averaged acreage should be used as opposed to the minimum, maximum, or most recently documented acreage. Although an explanation of how categories two through six are defined is presented in Appendix H - Draft UMAM Analysis, a description should be included in this Section as well. This approach does not seem to be consistent with the BMA, which states "Typically anticipated impacts involve direct burial of resources occurring within the equilibrium toe of fill of sand placement, and any predicted secondary impacts due to increased sediment loading in the system. Direct impact estimations are usually associated with the equilibrium toe of fill prediction, and the secondary impacts are impacts predicted beyond the ETOF." This Section references the 3 .1-acre nearshore ephemeral artificial reef constructed to mitigate impacts associated with the Reach 7 nourishment project. Please provide as summary of the burial/exposure of that reef as compared to the impacted acreage it was intended to offset. Did that reef maintain the ratio of sand to hardbottom required by permits for the duration of the monitoring period? This Section should explain the difference between the federal and state discount rates applied to time lag in UMAM calculations.	The text was revised to provide clarification and reference was made to section 4.4 for additional details - see response to Comment #197. See response to Comment #109. Reference to the Phipps 3.1-ac artificial reef was not found in Chapter 5.
303	Town of Palm Beach	CSI / Penny Cutt	5*. 1.3.2 Manatees:* It is assumed that vessels will be used to construct the artificial reef. This Section should state that the construction conditions in the Palm Beach County Manatee Protection Plan (MPP) are the USFWS manatee construction conditions, which have been incorporated into the MPP.	The Palm Beach County MPP was approved by FWC and has very similar language to the FWC Standard Sea Turtle and Manatee Protection Conditions for In-Water Work.
304	Town of Palm Beach	CSI / Penny Cutt	5.1.3.4 Dune Vegetation: Will the dune feature in both portions of the Project be planted, or will planting only occur within the Town portion of the Project?	The County also plans to plant the dune. Text was revised in 5.1.3.1.
305	Town of Palm Beach	CSI / Penny Cutt	5.2.1 Physical: This Section should indicate the monitoring frequency and duration. This Section should also speak to physical monitoring of the artificial reef for stability and subsidence.	The text was revised to indicate anticipated frequency and duration. A stability analysis will likely be conducted prior to final design of the artificial reef. It is unknown at this time if a physical survey will be conducted on the artificial reef.
306	Town of Palm Beach	CSI / Penny Cutt	5.2.3 Natural Hardbottom Monitoring: Is the monitoring prescribed herein consistent with the "Draft Standard Operation Procedures, Nearshore Hardbottom Monitoring for Nourishment Projects" (2014) prepared by the FDEP? If so, it should be stated herein, if not, differences and justification should be presented.	The monitoring methodology described in this section is based on permit-required monitoring of similar projects with similar resources in the region and includes methods consistent with the FDEP Standard Operating Procedures.
307	Town of Palm Beach	CSI / Penny Cutt	5*. 2.3.2 Hardbottom Mapping- In Situ and Aerial Analysis:* This Section references two pre-construction mapping events and three post-construction mapping events. As the BMA requires annual surveys of the BMA area for the life of the Agreement and the DEIS evaluated ten years of pre-Project data, one pre construction mapping event should be sufficient.	This reference is based on the 2011 FDEP-approved biological monitoring plan for Reach 8. The text was revised to say that two pre-construction mapping events *may* be conducted instead of *will* be conducted. The final requirement will be determined during permitting.
308	Town of Palm Beach	CSI / Penny Cutt	5.2.4 Mitigation Reef Monitoring: Subsidence of the boulders and accretion of sand around the artificial reef should also be monitored.	Mapping the perimeter of artificial reef was added to this section to document potential subsidence of the reef over time.
309	Town of Palm Beach	CSI / Penny Cutt	5*. 2.5 Dune Vegetation Monitoring:* This Section should describe the post-construction monitoring for the dune vegetation planting plan and indicate duration.	The monitoring frequency and duration will be determined during permitting.
310	Town of Palm Beach	CSI / Penny Cutt	5*. 2 6 Shorebirds:* This Section should describe the proposed shorebird monitoring, as well as indicate frequency and duration.	Text was added to indicate typical frequency and duration of monitoring required.
311	Town of Palm Beach	CSI / Penny Cutt	5.2 7 *Escarpment and Compaction:* This Section should describe escarpment monitoring and compaction monitoring procedures, frequency, and duration.	Text was added to indicate typical frequency and duration of monitoring required.

312	Town of Palm Beach	CSI / Penny Cutt	5.2 8 Beachfront Lighting: This Section should describe current and proposed beachfront lighting inspections and enforcement, as well as current compliance status.	Text was added to indicate the lighting ordinances in effect and what a lighting inspection should entail.
313	Town of Palm Beach	CSI / Penny Cutt	5. *2.9 Monitoring Schedule:* This Section should provide a table of the proposed monitoring schedule, including types of monitoring, frequency, and duration. There should also be a discussion of when success will be determined for the artificial reef and what contingency mitigation will be conducted if the artificial reef does not meet the success criteria. Similarly, there should be an assessment of whether the Project is having greater or lesser impacts on the natural environment than anticipated and whether additional mitigation should be required for any unanticipated/unpermitted impacts.	Additional text added to reiterate frequency and duration stated in the sections above. Reference was added referring to the Compensatory Mitigation Plan regarding monitoring and success criteria for the artificial reef.
314	Town of Palm Beach	CSI / Penny Cutt	6.0 Consultations, Coordination and Public Input: No comments on this section.	
315	Town of Palm Beach	CSI / Penny Cutt	7.0 List of Preparers and Reviewers: No comments on this section.	
316	Town of Palm Beach	CSI / Penny Cutt	8.0 Permits and Licenses: No comments on this section.	
317	Town of Palm Beach	CSI / Penny Cutt	9.0 Literature Cited: No comments on this section.	
318	Town of Palm Beach	CSI / Penny Cutt	10.0 Index: No comments on this section.	
319	Town of Palm Beach	CSI / Penny Cutt	Appendix A- Public Scoping Report: No comments on this Section.	
320	Town of Palm Beach	CSI / Penny Cutt	Appendix B: (1) The Technical Specifications provided are for a different project - the Annual Dune and Wetlands Restoration Project, which includes the Coral Cove Dune Restoration (Figure 1), the Grassy Flats Estuarine Habitat Restoration Project (Figure 2) and the Bryant Park Living Shoreline Project. While it was stated on Page 2-23 that the current Project should meet these specifications, this should be clarified. Project names, sand volumes, etc. should either be revised or redacted. If the intent of Page 2-23 is to just refer to the Technical Standards (Section 2.1.1), then this should clarified. (2) County specifications do not address placement below MHW. This should be addressed and/or clarified unless only referring to Section 2.1.1, as stated above. (3) There are inconsistencies between the document and the Appendices on the ordering of units -i.e. #ft (#m) versus #m (#ft). (4) The Table of Contents references 32 pages including figures, tables, and attachments; however, only 3 pages are included.	(1-2) Reference specifically to Section 2.1.1 of Appendix B was added to the text. (3) This is the final version of a Palm Beach County document and cannot be edited. (4) The pages included are the only ones relevant to the proposed Project.
321	Town of Palm Beach	CSI / Penny Cutt	Appendix C: General Comments: (1) This Report should include page numbers for reference. (2) The Report should indicate the datum referenced for depths and consistently present English and/or metric units. (3) Appendix C refers to the genus *Montastrea* but the DEIS refers to the genus *Orbicella.* The DEIS and all Appendices should reference the current genus name. (4) ERM should be defined as Palm Beach County Department of Environmental Resources Management.	Report was prepared and finalized by PBC.
322	Town of Palm Beach	CSI / Penny Cutt	Appendix C: Methods: (1) This Section indicates "The four surveyors were spread in an east-west orientation and swam north visually covering the majority of the exposed hardbottom areas." Please indicate how far apart the surveyors were during the survey. (2) This Section refers to "ERM staff' and "surveyors"; the credentials should be provided to confirm that qualified biologists conducted the survey.	Report was prepared and finalized by PBC.

323	Town of Palm Beach	CSI / Penny Cutt	Appendix C: Results: (1) The Report should describe visibility conditions during the survey. Understanding visibility and distance between surveyors will confirm that the entire width of the hardbottom was assessed as indicated in the Methods section. (2) References to Latitude and Longitude should include north and west references. (3) It appears that "bleached" and "dead" corals were lumped together; however, reference should be made to whether the colonies were bleached or dead, as bleached is different than dead. (1) The polygons delineating the 2010 and 2011 nearshore reef are not visible. It may be helpful to utilize different colors and/or line weights to make these polygons more visible. Additionally, it may be helpful to zoom in on the areas surveyed. (2) The acronym FNL is not defined in the legend.	Report was prepared and finalized by PBC.
324	Town of Palm Beach	CSI / Penny Cutt	Appendix D: General Comments: (1) There are inconsistencies between the DEIS and the Appendices on the order of units, i.e. #ft (#m) versus #m (#ft). (2) There are several formatting errors within the Table of Contents. (3) The Table of Contents and the Report refer to the enclosed CD and DVD; the information on the CD and DVD was not provided with the DEIS for review. This information should be made available. (4) The BMA requires that hardbottom monitoring be surveyed within a 60-day timeframe, as near to the date of the summer aerial photo as possible. We recommend that summer aerials be used with a summer benthic survey, rather than March aerials with an October benthic survey for hardbottom characterization. Although more hardbottom may be exposed in the winter months, often this hardbottom is scoured due to storms and therefore supports minimal benthic growth. (5) The BMA required a hardbottom mapping survey the summer following BMA execution; therefore, the summer 2014 hardbottom mapping information would likely correlate well with the summer aerial photography for hardbottom characterization within the Project area. The habitat classification map for the BMA, which evaluated 12 years of historical aerials (2000-2012), was to have been prepared within 120 days of completion of the summer 2014 survey; therefore, this data should be available to support this DEIS and associated coastal modeling.	(1-3) The 2013 Habitat Characterization Report was finalized and submitted to the Town of Palm Beach and Palm Beach County in July 2014. It is not within the scope of the EIS to edit this report. (4) Acknowledged. (5) The EIS has been updated with the 2014 aerial and hardbottom delineation data .
325	Town of Palm Beach	CSI / Penny Cutt	3.3.4 Coral: This Section should discuss possible reasons why no octocorals were observed in 2006 but 225 were observed in 20 13.	The 2013 Habitat Characterization Report was finalized and submitted to the Town of Palm Beach and Palm Beach County in July 2014. It is not within the scope of the EIS to edit this report.
326	Town of Palm Beach	CSI / Penny Cutt	3.3.5 Fish: This Section should compare fish observations from 2006 with fish observations from 2013 rather than just presenting observations in 2013. Tables 7 and 8 Acronyms are used in these tables that are not defined in the Report such as BHS for bare hard substrate. It would be helpful to defme these acronyms.	See response to Comment #325.

327	Town of Palm Beach	CSI / Penny Cutt	Figures 2a - 2e: It would be helpful to include page numbers on these pages. The Notes section states that the 2013 hardbottom was delineated by CB&I and the 2011 hardbottom was provided by Tetra Tech. This should specify whether the data was delineated in the field or digitized on computer.	See response to Comment #325.
328	Town of Palm Beach	CSI / Penny Cutt	2.3 Dune Vegetation Survey: The Survey Area should be defined by FDEP Monuments in this Section.	See response to Comment #325.
329	Town of Palm Beach	CSI / Penny Cutt	Table 2: It would be helpful to present the month and year for each aerial, as seasonal variability in hardbottom exposure has been documented in this area. This table does present the months for the two 2010 aerials, but does not discuss the potential reasons (seasonal variability) for the difference (more than 100%) between the acreage of hardbottom exposed.	See response to Comment #325.
330	Town of Palm Beach	CSI / Penny Cutt	Figures 3a - 3e and 4: It would be helpful to include page numbers on these pages. Why was the hardbottom only depicted for 2003, 2007, 2011, and 2013? How were these years selected? Why were other years eliminated? Please provide clarification. The Notes section states that the 2013 hardbottom was delineated by CB&I and the 2011 hardbottom was provided by Tetra Tech. This should specify whether the data was delineated in the field or digitized on computer.	See response to Comment #325.
331	Town of Palm Beach	CSI / Penny Cutt	3.2.1 Line-Intercept for Sediment: As the 2006 survey was conducted in May and July and the 2013 survey was conducted in October, this could explain differences between resource observations. This should be discussed in the Report.	See response to Comment #325.
332	Town of Palm Beach	CSI / Penny Cutt	Appendix E: General Comments: All Latin names should be in italics.	Italics was applied to all Latin namesin the BA.
333	Town of Palm Beach	CSI / Penny Cutt	1.5 Alternatives Considered: The Alternatives should be better defined so that this Report can stand alone in support of ESA consultation. It would be helpful to include a table presenting the differences between the different Alternatives being considered, as well as a purpose and need statement for the Project.	Additional details added to the Alternatives considered in Appendix E, Section 1.5.
334	Town of Palm Beach	CSI / Penny Cutt	3.1 Dune Environment: This Section should include a statement indicating that X% of the 2.07 mi (X km) long Project shoreline is fronted by dunes.	Added text indicating amount of project shoreline fronted by dunes to section 3.1 of the BA and section 3.3 of the EIS.

335	Town of Palm Beach	CSI / Penny Cutt	Table 3.1: This Table should break out species observed by survey rather than combining all species. Were all species observed during all surveys? Also, the text indicates that a survey was conducted in 2013, but the Table indicates it was conducted in 2014.	The survey when each species was identified has been added to the Table 3-1. The date in the table header was corrected to be 2013.
336	Town of Palm Beach	CSI / Penny Cutt	3.2 (now 3.4.4.2.) Beach Environment: A shorebird survey for the entire Project area should be conducted and used to update this Section. The results presented are only for the area between R-134 and R-141 and are from September 2006.	It is anticipated that a shorebird survey will be completed immediately prior to construction.
337	Town of Palm Beach	CSI / Penny Cutt	3.3 Intertidal and Subtidal Hardbottom Habitat: This Section refers to time averaged hardbottom exposure without explaining how the time averaging was done.	Text was revised to explain the application of the time-average methodology. See response to Comment #197.
338	Town of Palm Beach	CSI / Penny Cutt	3.4 Unvegetated Bottom: This Section references a review of studies but only references one study.	Text was revised to include additional literature in the following sections of the EIS: 4.6.2, 4.6.3, 4.6.4, 4.6.5, 4.6.6, 3.7.1.2; as well as to Appendix F Section 3.1.2 and Appendix E Section 3.4.
339	Town of Palm Beach	CSI / Penny Cutt	*5.1.1. Loggerhead Sea Turtles:* The Report states that Loggerheads are found in the open ocean offshore of the County, but does not make a statement as to whether the other species of sea turtles are found offshore or not; the Report only discusses nesting activity for other turtle species in Section 5.1.	Offshore information concerning green, leatherback, hawksbill and Kemp's ridley sea turtles is provided in Section 4.2.
340	Town of Palm Beach	CSI / Penny Cutt	*6.1.2 Swimming Sea Turtles: Groin Construction:* This Section should discuss potential impacts to sea turtles from noise and turbidity associated with in-water groin construction and with in-water artificial reef construction.	Text was revised to state that swimming sea turtles may by indirectly impacted during in-water groin and artificial reef construction activites due to a temporary increase in turbidity and noise.
341	Town of Palm Beach	CSI / Penny Cutt	*6. 3.2. Florida Panther: Direct and/or Indirect Effects:* This Section should also discuss other potential impacts from increased traffic such as air pollution, increased petroleum contaminated runoff from roads, and potential collision with upland wildlife that are prey species for panthers.	Comment noted. Chapter 6 was revised for clarity. Chapter 4 discusses the indirect effects of the increased traffic and noise on the Florida panther. The USACE believes that the effects of air pollution, increased petroleum contaminated runoff from roads, and potential collision with upland wildlife that are prey species for panthers as a result of increased traffic should not be described in detail as those effects are considered as general effects of increase in traffic.
342	Town of Palm Beach	CSI / Penny Cutt	6.5 Birds: *Cumulative Effects* : This Section should include a statement indicating that it is reasonable to expect that the Project will be nourished every 3 years and all previous and future nourishment projects on Palm Beach Island and nearby beaches represent actions that cumulatively impact shorebird habitat. Similar statements were included in other sections of this Report.	Text was revised as recommended.
343	Town of Palm Beach	CSI / Penny Cutt	Appendix F: *3.1.1. Coral/Live Hardbottom:* This Section indicates that a time average of exposed hardbottom was determined but does not explain how this was arrived at using the 10 years of data. Also, the data does not specify the months that the aerials were taken. Please describe the methodology that was utilized to time average the hardbottom and provide any agency approved protocols or guidance supporting the method utilized. The BMA requires that hardbottom be surveyed within a 60-day timeframe, as near to the date of the summer aerial photo as possible. The BMA evaluated 12 years of historical aerials (2000-2012). Rather than utilizing a winter aerial and winter survey, it is recommended that a summer aerial and survey be utilized to assess hardbottom exposure within the DEIS. The habitat classification map for the BMA was to have been prepared within 120 days of completion of the summer 2014 survey and this data should be available to support this DEIS and associated coastal modeling.	Text was revised to explain the application of the time-average methodology. See response to Comment #197. The month of each aerial was added to Table 3-1. The EIS and appendices have been updated with the 2014 aerial and hardbottom delineation data .
344	Town of Palm Beach	CSI / Penny Cutt	3.1.2 Unconsolidated (Soft) Bottom: This Section indicates that infaunal recovery can be as fast as nine months; however, in the DEIS and other Appendices only the one to four-year recovery period is presented. This Section also refers to a review of infaunal studies but only cites one reference. Also, should reference to "microalgae" be "macroalgae"?	The reference to microalgae is correct (see SAFMC, 2009c). Text was revised to include additional literature . See response to Comment #338.
345	Town of Palm Beach	CSI / Penny Cutt	3.2 Managed Species: This Section should indicate whether each species evaluated is found within the Project area. This information is provided for some species but not for other species like the spiny lobster.	The groups presented in 3.2.1 through 3.2.6 are present in the Project Area for at least a portion of their life history. This is stated in the paragraph under the bulleted list of managed fisheries Section 3.2. Literature was cited for specific observations when available.

346	Town of Palm Beach	CSI / Penny Cutt	*Table 3-3:* This Table does not specify whether Atlantic bluefin tuna are found as adults, juvenile, or both adjacent to the Project area as it does for the other species presented in the Table.	Text in the table was revised to specify that juvenile and adult Atlantic bluefin tuna are found in the Project Area.
347	Town of Palm Beach	CSI / Penny Cutt	4.0 Assessment of Impacts and Mitigation Measures: This Section should also define "secondary effects" where it talks about direct, indirect, and cumulative effects.	See response Comment #109.
348	Town of Palm Beach	CSI / Penny Cutt	*4.1.1. Impacts to Coral / Live Hardbottom:* This Section again refers to time average of exposed hardbottom; however, this process has not been defined.	See response to Comment #197.
349	Town of Palm Beach	CSI / Penny Cutt	*Burial / Sedimentation:* This Section states "Of these six managed species, pink shrimp are expected to occur within the Project Area as they are the only penaied species whose range includes south Florida." This Section then goes on to reference white shrimp and brown shrimp within the Project area.	Text was revised to only include pink shrimp in the Project Area.
350	Town of Palm Beach	CSI / Penny Cutt	*4.1.2 Impacts to Unconsolidated (Soft) Bottom: Groin Construction:* This Section states that "Infauna within the softbottom resources would only be temporarily displaced, therefore allowing recovery following disturbance." However, infaunal populations would not likely recover within the footprint of the constructed groin structures. There is no discussion as to whether the depth to rock was assessed within the footprint of groin construction. If rock is present within the intertidal zone, it is likely present beneath the unconsolidated sediment on the dry beach. How will the potential presence of rock beneath the dry and intertidal beach sand be addressed? Will pile installation require drilling and were the affects of drilling considered?	It is likely that hardbottom is present below the unconsolidated sediment. The depth of rock below the dry beach has not been assessed. It is unclear what information the commenter is seeking regarding how the rock beneath the beach will be addressed.
351	Town of Palm Beach	CSI / Penny Cutt	*4 . 1.3 Impacts to Water Column: Turbidity:* Turbidity that will occur as the beach equilibrates, particularly the portion of the Project receiving sand from offshore borrow areas, should be considered here.	Text was revised to specify that the percentage of fines within the sand is directly related to anticipated turbidity during equilibration. See response to Comment #114.
352	Town of Palm Beach	CSI / Penny Cutt	*Noise:* This Section discusses noise associated with the placement of sand, but does not address noise associated with the construction of groins or the construction of artificial reefs.	Text was revised to include anticipated noise from groin and artificial reef construction.
353	Town of Palm Beach	CSI / Penny Cutt	*4.1 . 4 Cumulative Effects:* This Section considers the Town renourishing every 4 years and the County renourishing every 3 years. However, in the DEIS and other Appendices, nourishment intervals of every 2-4 years and 2-3 years are referenced, respectively and the UMAM assumes nourishment every 3 years. We suggest using a consistent conservative nourishment interval throughout the document. This Section also states that "The anticipated effects associated with the proposed Project and the long-term and cumulative effects associated with the reasonably foreseeable actions are not anticipated to result in any measurable cumulative losses of ecological functions and services, or cumulative impacts on EFH or managed species." However, given the other projects anticipated in the reasonably foreseeable future within this region and the anticipated nourishment cycle of 2 to 4 years for this Project, a measurable cumulative loss of this ubiquitous habitat may become apparent. Additional discussion of cumulative ecological losses may be warranted here.	Text was revised throughout to designate the Town of Palm Beach's desire for a 4-year nourishment interval and the County's desire for a 3-year nourishment interval. The ranges referred to in the comment are for anticipated life expectancy.

354	Town of Palm Beach	CSI / Penny Cutt	4.2 Mitigation Measures: This Section states that 6.39 acres of mitigative artificial reef would be required to offset permanent and temporary impacts; however, the environmental regulatory agencies have not yet completed their evaluation of the Project and made that determination. The sentence should be qualified to be based upon the UMAM calculations presented in the DEIS and the Applicant's Preferred Project. Were depth probes conducted to confirm the depth of the sand veneer over the hardbottom to confirm artificial reef siting in the proposed locations? What is the plan for contingency mitigation if additional impacts are realized or if the mitigation does not achieve the success criteria? What is the capacity for mitigation within the areas presented as artificial reef locations? What are the criteria for the mitigation reef to be deemed successful?	The mitigation acreage is prefaced by "Based on a preliminary UMAM evaluation (provided as Appendix H to EIS)..." indicating that the mitigation requirement has not yet been finalized. See Appendix I for the Draft Mitigation Plan: Section 2.2 describes the artificial reef siting methods, including depth probes and subbottom profile surveys. A contingency mitigation plan has not been determined. The capacity for mitigation in these areas is still under development. Section 8.0 describes the performance standards and the mitigation success criteria based on permit requirements for similar projects.
355	Town of Palm Beach	CSI / Penny Cutt	5.0 Conclusion: This Section states that the " ... Project may adversely impact hardbottom and softbottom, and will temporary impact the marine water column ... " However, it has been determined and presented throughout the DEIS and Appendices that the Project "will" impact hardbottom and softbottom.	It has been determined throughout the EIS and appendices that the project may directly and indirectly impact hardbottom and softbottom. It is not anticipated that these impacts will result in significant cumulative impacts.
356	Town of Palm Beach	CSI / Penny Cutt	**Appendix G:** The methodology used to assess hardbottom impacts does not appear to be clear. Much of the Report text refers to the DELFT3D model to evaluate hardbottom coverage. However, in this Section, the use of the Profile Translation Theory is discussed. A comparison of results that includes graphic figures showing the ETOFs from both models and how the estimated hardbottom coverage was calculated should be provided. This Section states " ... the reasonably anticipated extent of hardbottom impacts account for the analytical estimation of the ETOF and the DELFT3D model results described." This statement should be clarified. The method for the estimation of the ETOF should comply with the methods outlined in the FDEP ETOF Study dated June 2005. Recent FDEP regulatory permitting experience has indicated the FDEP has required two independent tools to evaluate the estimated ETOF. The estimation of the ETOF utilizing profile translation is an acceptable method; however, additional information and documentation should be provided to demonstrate the results of the profile translation evaluation of the alternatives evaluated. Similarly, additional documentation should be provided relative to the use of DELFT3D and associated results for each alternative, in the evaluation of the ETOF and resulting hardbottom coverage. The DELFT3D model has limitations for use in predicting the ETOF, as the model does not calculate or track specific shoreline locations. The model is a moveable bed model that calculates (1) the volume and direction of sediment that is moving, and (2) the resultant changes in the local seabed elevation at each time step. Predicting the shoreline location and other features such as the ETOF can be estimated by interpolating a specific depth contour among the seabed elevations that are computed at each grid point in the model. The use of DELFT3D in the estimation of the ETOF and resulting temporary and permanent hardbottom impacts needs to be further clarified and explained with sample calculations and illustrative figures. The precision of the modeling should be discussed and a tolerance or range of hardbottom impacts should be presented to account for the modeling, field data, and other sources of tolerances. Appendix G-1 SBEACH Analysis Report: Significant wave heights were utilized as offshore wave input for the SBEACH model run; however, for the profile change SBEACH model, the root mean square (rms) wave heights are required to simulate cross-shore sediment transport.	See response to Comment #197. The range of hardbottom impacts were considered by simulating a range of grain sizes - see response to Comments #49 and #200. The information that root mean square data is required for SBEACH model is not report in the user manual. In order to be more conservative, significant wave heights were used as offshore wave input for SBEACH model runs. Equilibrium profiles with respect to the survey profiles and fill templates are shown in Sub-appendix G-5.
357	Town of Palm Beach	CSI / Penny Cutt	*Page* 7: Grain size data of 0.3 mm were collected in 2006. It is recommended to collect grain size data on the existing beach to represent the present beach conditions. A median grain size of 0.3 mm is used for the SBEACH model; however, a median grain size of 0.36 mm is used for DELFT3D model.	A sensitivity analysis was performed to determine the sensitivy of the SBEACH model to the 0.06 mm change in grain size. The change in grain size from 0.30 mm to 0.36 mm did not have a significant effect on the model results. Within the Town's portion of the project, additional modeling was performed. As part of this effort, SBEACH model was run using a median grain size of 0.36 mm.

358	Town of Palm Beach	CSI / Penny Cutt	*Page 10:* We recommend preparation of profile plots to show the profile comparison between measured storm profiles and model calibrated profiles.	Model calibration was performed to the volume change above Mean Low Water and to the shoreline changes. Table 4-1 Sub-appendix G-1 presents a comparison of the observed and calibrated shoreline changes, volume changes and landward limits of erosion. Final calibration agrees well with the observed conditions within the Project Area.
359	Town of Palm Beach	CSI / Penny Cutt	*Page 19:* The design storms are given at the water depth of 356 m. The design storms need to be converted to the SBEACH model start location, where the water depth may be less than 10 m.	SBEACH model was run at a water depth of about 30m. After reviwing model results it was determined that water depth of the design storm doesn't seem to influence model results.
360	Town of Palm Beach	CSI / Penny Cutt	*Page 21:* This Section states that " ... the delineations of hardbottom will be compared to the model sedimentation results and analytical ETOF to estimate the direct and temporarily impacted acreage . .. " However, the direct and temporarily impacted acreage must be determined prior to post construction delineations of hardbottom.	Text revised to clarify.
361	Town of Palm Beach	CSI / Penny Cutt	*Page 19:* The Depth of Closure is presented as -19.9 ft NGVD; however, all other elevations in this Report reference NAVD. The elevation needs to be confirmed and converted to NAVD for consistency throughout the Report.	Depth of closure presented is in NGVD and it will be included corresponding value in NAVD.
362	Town of Palm Beach	CSI / Penny Cutt	Appendix G-21H2VOF Modeling Report: The selection of associated parameter values used in the IH2VOF model should be presented in the Report.	Parameters are presented in the report in Section 2.5 of the IH2VOF report.
363	Town of Palm Beach	CSI / Penny Cutt	Appendix G-3 DELFT3D Modeling Report: *Page 10* : The Report states that MSL is -0.28 ft NA VD; however, MSL is -0.28 m NA VD.	The correct number is -0.28 m NAVD. The text was revised.
364	Town of Palm Beach	CSI / Penny Cutt	*Page 23 Sediments:* There has been updated sand sampling completed since the presented results, which are from 1993. This Section states that sand samples collected by Palm Beach County in 1993 were used for the DELFT3D modeling, specifically the 0.36 mm mean grain size diameter. Section 3.2.8 of the DEIS presents sand samples from a 2010 ATM report for the Project area with a composite mean grain size diameter of 0.43 mm for the Project site. We recommend clarifying why the most recent sediment data was not utilized for this modeling. Appendix G-1 states that sand samples collected in 2006 by CPE confirm a native grain size diameter of 0.3 mm with coarser sand measuring 0.45 mm based on a 2012 ATM report. The analyses should remain consistent, where applicable, and it should be clarified why the most recent sediment data was not utilized for the modeling. Further, it should be clarified why new samples were not collected to obtain a current sediment profile based on subsequent beach profile change. The recent sand source report prepared by ATM with Gary Zarillo, P.G. should be referenced, as well as the data collected by Coastal Systems in support of securing Corps Permit SAJ-2005-07908 and DEP Permit 0250572-003-JC.	See response to Comment #49.
365	Town of Palm Beach	CSI / Penny Cutt	*Page 43:* Significant wave heights were utilized as offshore wave input for the DELFT3D model run; however, the DELFT3D model needs the root mean square (rms) wave heights to simulate crossshore sediment transport.	Delft3D uses significant wave height as boundary input.
366	Town of Palm Beach	CSI / Penny Cutt	*Page 50:* A median grain size of 0.36 mm was used for the DELFT3D model; however, a median grain size of 0.30 mm was used for SBEACH model.	See response to Comment #357.

367	Town of Palm Beach	CSI / Penny Cutt	*Page- 59 Model Calibration Summary:* The modeling results are being utilized to simulate predicted performance of coastal engineering solutions and the calibration must be defensible. The limited calibration text presented here is insufficient. Additionally, it may be practicable to include a larger margin of error than 5% for sediment budget. The text " ... demonstrating the model's skill in simulating the general patterns occurring within the project area" needs to be re-worded. There are limitations with numerical modeling, as such the tolerances and variations with DELFT3D need to be clarified. The Final Order issued for the Reach 8 Beach Nourishment Project in June 2009 (permit applications filed in June, 2005) stated that the Town failed to adequately demonstrate that the indirect and direct hardbottom impacts would not exceed the predicted 6.9 acres of coverage. Based on this regulatory permitting history in the project area, the calibration and interpretation of the DELFT3D modeling results in conjunction with the ETOF estimates need to be further clarified and documented. The beach fill density should be presented in figures for all alternatives evaluated.	The text regarding model calibration was revised for clarity. Beach fill density of each project is presented in Sub-Appendix G-3, Table 5-3.
368	Town of Palm Beach	CSI / Penny Cutt	Appendix G-4 BOUSS2D Modeling Report: *Page I 0 -Surf Bathymetry:* Is the 3-year simulation for the DELFT 3D model sufficient to adequately evaluate the surf bathymetry over time? The simulations for the first 3 years should be evaluated as well; as surfers will not want to wait 3 years for suitable surfing conditions to return to normal only to see the beach nourished again when ideal surfing conditions return. The annually simulated conditions should be evaluated and reviewed.	
369	Town of Palm Beach	CSI / Penny Cutt	**Appendix H:** UMAM assesses the functional loss associated with a project. When scoring an impact area polygon, if it the project will not result in a total loss of ecological function in that polygon, then the "with project" score for that particular polygon would reflect the remaining ecological function of that polygon. As such, the score for the permanently buried hardbottom polygon would be lower than the score for the temporarily buried hardbottom polygon. However, UMAM rules require that the for areas being filled, all three category scores should go to zero, since all aquatic functions and values of the polygon, as defined in Part I, are lost when that polygon is filled. UMAM converts project impacts to debits and mitigation benefits to credits. The goal of UMAM is to ensure that the credits offset the debits. Based upon a review of historical projects permitted using ratios and more recent projects permitted using UMAM, the BMA determined that upfront mitigation will be required at a rate of 1:1 and post project mitigation will be required at a ratio of 1: 1.5. The ratios arrived at in the DEIS are not consistent with the ratios presented in the BMA.	See response to Comments #78 and 93.
370	Town of Palm Beach	CSI / Penny Cutt	General Comments: *Time Averaging of Hardbottom Exposure* : The Draft UMAM Analysis is based upon an assumption that there is agreement and acceptance of the time averaging approach to quantify the hard bottom that would be affected by each of the Project Alternatives. However, the methodology has not been presented in the DEIS or any of the Appendices for evaluation. We recommend presenting the methodology for time averaging, the agency concurrence with this approach, and the resultant polygons depicting the time averaged areas for review.	See response to Comment #91.
371	Town of Palm Beach	CSI / Penny Cutt	*Water Environment:* Throughout this Analysis there are statements indicating that Water Environment will not be altered. However, the water environment will be altered by turbidity associated with Project construction every three years and Project equilibration post construction, particularly in the areas where sand from offshore borrow areas is used.	The water environment will not be permanently altered due to the project.
372	Town of Palm Beach	CSI / Penny Cutt	*Risk Factor:* Throughout this Assessment a Risk Factor of 1.00 is applied to hardbottom indicating that there is no risk in hardbottom becoming re-exposed. However, given the continuous addition of sand into the regional system from the updrift projects, including Mid-Town and Phipps, there is progressively more risk that the hardbottom in this area will eventually be perpetually buried.	See response to Comment #80.

373	Town of Palm Beach	CSI / Penny Cutt	*Mitigation:* The term "mitigation" appears to be used in this Assessment to mean "compensatory mitigation". However, the federal definition of "mitigation" includes avoidance, minimization, and compensation.	Acknowledged.
374	Town of Palm Beach	CSI / Penny Cutt	1.0. Introduction: This Section refers to the "traditionally-used ETOF analysis"; please clarify whether this is referring to the Profile Translation method? There should be a discussion of how the Profile Translation method represents the worst case scenario, in which all placed sand moves cross shore and no sand moves alongshore and is therefore the most conservative estimate of hardbottom impacts.	It has been clarified that this does refer to the profile translation method. An analysis was not conducted to determine if this represents the worst case scenario.
375	Town of Palm Beach	CSI / Penny Cutt	*Permanent:* This Section states that "Permanent impacts are those that, following placement of fill, will result in hardbottom burial for at least 3 years, at which time the project may be constructed again .... These areas are considered to have lost most, but not all, of their ecological function. While these areas will be subject to increased sand cover, this habitat is already ephemeral in nature; therefore, the habitat will continue to provide ecological function ... " When applying UMAM, the impact area in this case is hardbottom. If the hard bottom will be permanently filled, then it will lose all of its ecological function as hardbottom. Pursuant to the UMAM rule, for areas being filled, all three category scores should go to zero, since all aquatic functions and values of the polygon, as defined in Part I, are lost when that polygon is filled. We certainly recognize that there is some ecological function associated with sand bottom. However, Part I of the UMAM assessment defines the ecological functions and values for the polygon being evaluated. In the case of permanent hardbottom burial, the Part II scores must consider filling the hardbottom and the associated loss of aquatic function and value, based on the Part I for this polygon, by this resource being buried. This is comparable to filling a wetland. The functions and values of the newly created "upland" are not considered during the impact evaluation. What is considered is that the wetland is no longer providing aquatic functions and values as a wetland once it is filled. This is clearly defmed in Sec. 62-345 F.A.C. Therefore, this statement needs to be revised to indicate that all ecological function as a hardbottom will be lost in the area of permanent impact.	See response to Comment #78.
376	Town of Palm Beach	CSI / Penny Cutt	*Temporary:* This Section states that "Temporary impacts are those that, following placement of fill, are expected to be buried for less than 3 years, which allows these resources to regain ecological function for the period of time when they are re-exposed." However, the Project is proposed to be nourished every three years, which may not be a sufficient timeframe for hardbottom resources, such as scleractinian corals and octocorals, to regain ecological functions and values. This Section also states that temporary impacts " ... can be considered as partially self-mitigating; when conducting UMAM analyses on areas of temporary impact, minimum risk is used and once the total mitigation is initially calculated, then the temporary impact acreage is subtracted from this total in order to determine the additional mitigation required to offset the temporary impact." This methodology is not presented in the UMAM Rule, Chapter 62-345 and would result in supplanting required mitigation. We are not aware of the Corps or NMFS ever considering an impacted area as partially self mitigating. This argument is further diluted by the proposal to nourish the Project every three years and the cumulative inputs of sand from the updrift beaches, presenting the likelihood that the hardbottom in the region may eventually be permanently buried. This approach should also be coordinated with the UMAM Coastal Workgroup for consistency with approaches currently under development. If these temporary impacts are within the predicted ETOF then they should be considered permanent impacts as described in the BMA and previously issued permits for similar projects.	See response to Comments #78 and 80.

377	Town of Palm Beach	CSI / Penny Cutt	*Secondary:* A discussion of secondary impacts should be included here.	See response to Comment #109.
378	Town of Palm Beach	CSI / Penny Cutt	*BMA, Appendix B:* Appendix B of the BMA states that direct impacts result from direct cover of hardbottom through fill, usually within the ETOF and indirect impacts result from expected secondary impacts to communities through increased sediment loading in the area. Appendix B of the BMA also states that "secondary impacts" is often used interchangeably with "indirect impacts". These definitions are consistent with evaluations for previous beach permits; however, this is not consistent with the approach taken in this DEIS or Appendices. It is also not clear in the DEIS how predicted indirect impacts were discerned from secondary impacts. Furthermore, the level of reasonable assurance that a particular impact will persist for one, two, or three years has not been presented.	See response to Comment #109.
379	Town of Palm Beach	CSI / Penny Cutt	2.0 Seven Hardbottom Impact Types: As this Project is proposed to be nourished every three years, the hardbottom in the region is ephemeral, modeling is not an exact prediction of impacts that will occur, and impacts will likely vary somewhat from nourishment to nourishment, we recommend a reduction in the number of categories of hardbottom impact types presented herein. Temporary impacts are likely going to occur, but not for the full three years. Secondary impacts will occur, but to an undefined extent. During storm events there will be additional impacts and as more sand is added to the system there will be cumulatively more impacts to areas defined as temporary and secondary. Section 7.0 Secondary specifies that " ... secondary impacts will likely require mitigation (artificial reef) ... "; however, Sections 1 through 6 describing the other types of hardbottom impact do not specify the type of mitigation that will be conducted.	"Artificial reef" was deleted from the secondary impact description in Section 2.0 (#7). The type of mitigation that will be conducted is specified in Section 3.0 for each type of impact.
380	Town of Palm Beach	CSI / Penny Cutt	*2. Direct Temporary (<1 Year):* It appears that the word "exposed" may be missing from the following: This impact area was calculated by taking the total area of exposed hardbottom within the CTOF and subtracting areas shown to have sediment accumulation polygons "exposed" at 1, 2 and/or 3 years postconstruction based on the modeling results?	Additional text was added to clarify the calculation.
381	Town of Palm Beach	CSI / Penny Cutt	7. *Secondary:* This Section again refers to "traditional equilibrium toe of fill (ETOF)" is this referring to the Profile Translation Method?	It has been clarified that this does refer to the profile translation method.

382	Town of Palm Beach	CSI / Penny Cutt	3.0 Details of Input for UMAM Evaluation and Associated Mitigation Required for Each Impact Type: *Mitigation Required:* This Section, for each hardbottom type, presents the required mitigation per acre and then presents the required mitigation using the FDEP time lag in parenthesis. A discussion of the federal discount rate used to calculate time lag versus the state discount rate used to calculate time lag should be added. The mitigation required should indicate that it is based upon the federal requirements, indicating that the State calculated requirements are presented in parenthesis. A summary table should be added that presents the definition of each of the seven hardbottom impact types considered and briefly defines how each was calculated and quantified. For each alternative evaluated, graphics should be presented depicting the polygons associated with each assessment area. A comparison should be made for mitigation requirements (once agreement is made that the ten year time averaging of exposed hardbottom is an acceptable approach and was done correctly) presenting the size of the artificial reef that would need to be constructed for each of the evaluated alternatives based on impacts within the ETOF. The assessments should not consider any impacts to be partially self-mitigating, as this is not provided for in the UMAM rule. In the UMAM assessment presented herein, it appears that each mitigation area polygon includes both self-mitigating ephemeral hardbottom and artificial reef with one combined risk factor. This risk factor appears to be based upon the likelihood of the hardbottom to become re-exposed rather than the risk associated with the artificial reef meeting the success criteria. The artificial reef mitigation should be assessed separately from any self mitigating ephemeral hardbottom and a separate risk factor should be assigned to each. The risk factor associated with the artificial reef (one for the Town and one for the County since the artificial reefs are located in different areas with different characteristics) should take into consideration the reasonable assurance that the mitigation reef will remain exposed over time, with relatively the same ratio of sand to rock as the impact area, given the huge variability of hardbottom exposure within the Project area. The revised UMAM worksheets require that you select the two factors that most contributed to the scores. The revised UMAM worksheets should be used when preparing the Final UMAM Analysis.	"…based on the federal requirement." was added after each area of mitigation required per acre of impact. Table 4-1 summarizes the impact to mitigation ratio. The definition of each impact type is presented in Section 2.0. It does not seem necessary to include a summary of this information as each definition is not very long. A comparison table of impacts to mitigation is presented in Chapter 4, Tables 4-1 through 4-3 and Chapter 5, Tables 5-1 through 5-3 for the combined projects. No changes were made to the UMAM scores applied to the impact types.

383	Town of Palm Beach	CSI / Penny Cutt	*Permanent Impact Area:* (a) Location and Landscape Support: The Draft UMAM Analysis assigned the permanent impact area Location and Landscape Support a value of 10 (perfect) without the project and a value of 1 with the project. The without project score for Location and Landscape support should not be a 10, as the area is located between two inlets that discharge urban runoff during every tidal cycle. The project is also located adjacent to a developed shoreline with 170 outfalls (67 public and 103 private, DEIS), supports recreational vessels in the vicinity, and is subject to residential recreational usage. The water quality degradation associated with inlet and outfall discharges is addressed under the Water Quality score; however, the location of the site is not a pristine location away from urban development and usage, rather it is located adjacent to a highly urbanized area. As such, the without project score should be reduced to an 8. The with project score should be a 0, as this area will be perpetually filled. (b) Water Environment: The Draft UMAM Analysis assigned the permanent impact area Water Environment a value of 6 without the project and maintained a 6 with the project. The without project score should be slightly higher, at a 7 and the with project score should be a 0, as this area will be perpetually filled. (c) Benthic Community: The Draft UMAM Analysis assigned the permanent impact area Benthic Community a value of 10 without the project and value of 1 with the project. The without project score should be a 9, as the benthic community is not optimal because it is somewhat suppressed due to water quality impacts and residential trampling. The habitat is; however, very close to optimal. The with project score should be 0, as there will be no benthic community remaining in the area that is permanently filled. The benthic community being scored by UMAM is the benthic community identified in the UMAM Part I Worksheet, which is a hardbottom habitat. Once permanently filled, there will be no hardbottom habitat remaining in this polygon.	a and c) The USACE determined that the habitat was scored a 10 as it represents the best habitat it can in the given location. b) No impacts are anticipated to occur to the water environment. See response to Comment #78.
384	Town of Palm Beach	CSI / Penny Cutt	This same approach should be repeated for scoring the Direct Temporary (<1 Year), Direct Temporary (>1 Year), Direct Temporary (>2 Years), Indirect Temporary (1 Year), Indirect Temporary (2 Years), and Secondary impact categories. However, since the area is ephemeral hardbottom that is proposed to be nourished every 3 years, potentially more often depending on storm frequency and intensity, and the cumulative volume of sand in the system will be increasing based upon updrift project inputs including Midtown beach nourishments and Phipps beach nourishments, these categories seem excessive. It is therefore recommended that only two (direct and indirect) or three categories (permanent, temporary, and secondary) are evaluated. We also recommend including all impacts within the ETOF as permanent impacts, as defined in the BMA and previously issued permits for similar projects.	No changes were made to the UMAM analysis. See response to Comment #80.
385	Town of Palm Beach	CSI / Penny Cutt	If maintaining seven impact area categories, the UMAM worksheets should be organized so as to present Part I followed by Part II for each impact type (1 through 7), Part I followed by Part II for the artificial reef for the Town, and Part I followed by Part II for the artificial reef for the County. Corresponding graphics depicting the polygons evaluated in each Part I/Part II set should be referenced and included. Impact area polygons do not need to be contiguous; however, they must be adequately described by the same Part I.	See response to Comment #77.
386	Town of Palm Beach	CSI / Penny Cutt	UMAM Worksheets: The following assumes that a separate impact area polygon does not need to be assessed for the footprint of the groins on the dry beach.	
387	Town of Palm Beach	CSI / Penny Cutt	Town of Palm Beach: *Impact Area:* There should be 7 Part I's for the Town; There should be 35 Part II's for the Town; One Part II for each Alternative (two through six) for each Impact Area Type (one through seven)	See response to Comment #77.
388	Town of Palm Beach	CSI / Penny Cutt	*TPB Mitigation Area:* There should be one Part I for the Town's artificial reef; There should be one Part II for the Town's artificial reef	See response to Comment #77.

389	Town of Palm Beach	CSI / Penny Cutt	*TPB Summary Table:* A summary table should be provided to present the scores on each of the Part II worksheets, demonstrating that the Relative Functional Gain is equal to the Relative Functional Loss for each of the alternatives for the Town's portion of the project.	
390	Town of Palm Beach	CSI / Penny Cutt	Palm Beach County: *Impact Area:* There should be 7 Part I's for the County; There should be 35 Part II's for the County; One Part II for each Alternative (two through six) for each Impact Area Type (one through seven)	
391	Town of Palm Beach	CSI / Penny Cutt	*PBC Mitigation Area:* There should be one Part I for the County's artificial reef*;* There should be one Part II for the County's artificial reef	
392	Town of Palm Beach	CSI / Penny Cutt	*PBC Summary Table:* A summary table should be provided to present the scores on each of the Part II worksheets, demonstrating that the Relative Functional Gain is equal to the Relative Functional Loss for each of the alternatives for the County's portion of the project.	
393	Town of Palm Beach	CSI / Penny Cutt	*Direct temporary(< 1 Year):* This Section indicates that the "without project" score for benthic community was given a 10 (perfect) and the "with project" score for benthic community was given a 9 (nearly perfect). The risk factor provided in this section was a 1.0 for no risk. According to the text, this partially self-mitigating habitat was subtracted from the impact area. This does not appear to be proper application of UMAM. Appendix H states that "At 3 years post-construction, it is assumed that the Project may be reconstructed, and the impacts will be repeated." This area will be buried for approximately 1 year- 33% of the proposed project life- but will require 97.5% less mitigation than the area permanently buried. As it appears that this area is within the ETOF, it should be evaluated as a permanent impact. At a minimum, this polygon should be assessed for what it is – temporarily impacted ephemeral nearshore hardbottom. It is not appropriate to consider the permanently or temporarily buried impact area as partially self mitigating; there are no such provisions in the UMAM rule. Even if it was appropriate, the proper approach would be to score the partially self-mitigating area as a separate mitigation polygon and not to combine it with the artificial reef UMAM worksheets and/or to subtract any mitigation scores from the impact area scores. If an area is not being filled, but will be affected by the project (i.e. indirect/secondary impact outside the ETOF), it is appropriate to recognize the remaining aquatic functions and values within the polygon in the with project score. If the area is being filled (is located within the ETOF) then the UMAM rules require the with project scores to be taken to 0.	The USACE determined that the habitat was scored a 10 as it represents the best habitat it can in the given location. See response to Comments #78 and 80.

394	Town of Palm Beach	CSI / Penny Cutt	*Mitigation Artificial Reef:* There should be one Part I UMAM Worksheet filled out for the Town artificial reef and one Part II UMAM Worksheet filled out for the Town artificial reef. Similarly, there should be one Part I UMAM Worksheet filled out for the County artificial reef and one Part II UMAM Worksheet filled out for the County artificial reef. Two separate worksheets should be prepared because the DEIS indicates that the Town and County may use different materials for construction (boulders versus modules) and different construction footprints (pod arrangements) for their artificial reef designs. (a) Location and Landscape Support: The Location and Landscape Support score for the artificial reef should take into account the location between two urban inlets, outfalls in the area, recreational vessel usage in the area, and upland recreational usage. The water quality degradation associated with these discharges is addressed under the Water Quality score; however the location of the site is not a pristine location away from urban development and usage. The without project score would likely be similar to the without project score for the impact area, an 8 and the with project score should not change. (b) Water Environment: The mitigation area Water Environment value should be around a 7 and the with project score would not change, as it is assumed that clean materials will be placed. Minimal turbidity would be anticipated during construction, as no new sand is being added and there would be no equilibration, other than slight settling of the boulders. (c) Benthic Community: The Benthic Community value for without project would be a 0 since no benthic community is currently present. This value should be a 0 for the same reason that the permanent impact benthic community with project score should be a zero. The Draft UMAM Analysis did properly provide a 0 for benthic community in this location. The with project score would probably be an 8 for the same reasons that the without project score for the permanent impact area benthic community should be an 8. The artificial reef score would not likely be a 10, as an artificial reef will not likely ever perfectly replicate natural hardbottom.	See response to Comment #77.
395	Town of Palm Beach	CSI / Penny Cutt	*Risk:* A risk factor should be assigned to the Town artificial reef and a risk factor should be assigned to the County artificial reef. Pursuant to Sec. 62-345.600(2), F.A.C., the risk factor is assigned a value between 1 (no risk) and 3 (high risk). For the proposed artificial reefs, the risk factor should take into account the potential for the reef to meet the specified success criteria. The success criteria should include providing a specific acreage of exposed hardbottom to offset the lost functions and values associated with the project. The success criteria should also include a requirement to maintain similar hardbottom/sand ratios within the artificial reef site to those of the impact area site. After construction of the 3.1 acre ephemeral artificial reef for the Phipps nourishment project, the reef was partially buried. If buried, the reef cannot offset lost aquatic functions and values. Other reefs constructed in this area have completely subsided and are not providing any habitat functions or values As the sites selected will have a sand veneer over hardbottom, there should be minimal risk of boulder subsidence. Therefore, a risk factor of 1.5 is probably appropriate for the mitigation reefs.	No changes were made to the UMAM analysis.
396	Town of Palm Beach	CSI / Penny Cutt	*Time Lag:* Pursuant to Sec. 62-345.600(1), F.A.C., time lag is the period of time between when aquatic functions and values are lost at an impact site and when the mitigation site has achieved the outcome that was scored in Part II. Time lag is only assessed for the mitigation site(s).	
397	Town of Palm Beach	CSI / Penny Cutt	*Mitigation Required:* The Draft UMAM Analysis refers to "mitigation required" but does not specify what type of mitigation is required or proposed. Is "mitigation required" referring to the acreage of the artificial reef that would be required to offset the Project debits? What is the corresponding sand/hardbottom ratio assumed for these calculations?	See Appendix I for details on the type of mitigation required.

398	Town of Palm Beach	CSI / Penny Cutt	*Table 4-1:* Please clarify this table, as we are not sure what it is presenting. This table should be replaced with a table that indicates the debits for each habitat type in the Town portion of the Project, the debits for each habitat type in the County portion of the Project, the credits for the Town's artificial reef, and the credits for the County's artificial reef. Additional scores used to calculate credits and debits could be included; however, they need to correspond to a proper UMAM assessment. The score for a polygon that has not lost all aquatic function and value (but is not being filled) reflects the remaining ecological function; the polygon is not scored as both an impact polygon and a mitigation polygon. Similarly, the mitigation score should only be for the artificial reef, not for a combination of re-exposure and artificial reef.	Table 4-1 in Appendix H provides the ratio of impact to mitigation required based on impact type and considers the federal and state scoring approach.
399	Town of Palm Beach	CSI / Penny Cutt	*Figure 4-1:* This Figure is too small to accurately review; zoomed in sections should be presented. How were the polygons representing the time average of exposed hardbottom delineated from aerial image between 2003 and 2013 determined?	This figure was expanded over two pages for better viewing and now includes the results from the modeling of three grain sizes: 0.25 mm, 0.36 mm and 0.60 mm. The polygons respresent accumulation polygons from the Delft3D modeling. The hardbottom delineation was updated to include 2014 but does not represent the time-averaged hardbottom. The time-averaged hardbottom is a calculation and not representd by a polygon.
400	Town of Palm Beach	CSI / Penny Cutt	Part I - Qualitative Description: *Uniqueness* : This section of the Part I UMAM indicates that the area is "somewhat unique; the intertidal portion of the hardbottom ridge terminates to the north of the project area." This area is not unique; it is ubiquitous in southeast Florida.	
401	Town of Palm Beach	CSI / Penny Cutt	*Anticipated Utilization by Listed Species:* Rather than stating "The Florida manatee is common in PBC ... "this Section should state that the manatee has the potential to occur in the Project area, as was stated for the smalltooth sawfish.	This change does not seem necessary
402	Town of Palm Beach	CSI / Penny Cutt	*Significant Nearby Features:* This Section should indicate the distance from the Project area to the outer reef.	This change does not seem necessary
403	Town of Palm Beach	CSI / Penny Cutt	**Appendix I:** 1.0 Goals and Objectives: This Section states that the Project has avoided and minimized impacts to nearshore hardbottom to the maximum extent practicable " ... by using a truck haul approach instead of dredging an offshore borrow area ... " Although it is accurate that the Project is not" ... hydraulically pumping the sand through a pipeline to the Project Area." The Project will require dredging an offshore borrow area because additional dredging will be done to provide beach fill material for this Project. We recommend that this statement be revised and qualified. This Section also states that "Impacts to hardbottom were based on a time average of exposed hardbottom delineated from aerial images between 2003 and 2013." However, this methodology was never explained in the DEIS or any of the Appendices. Please present the methodology. This Appendix should address the potential feasibility of relocating any of the corals from the impact site to the mitigation reefs.	Section 1.0 was revised to clarify the Town's intent to utilize stockpiled dredged sand from Phipps or Mid-Town. Section 4.1 in Appendix I was revised to include details on the impact assessment conducted in GIS using the Delft3D modeling results and the time-average methodology. No corals have been identified in the Project Area that meet coral relocation criteria.
404	Town of Palm Beach	CSI / Penny Cutt	*Figure 1-3:* This Figure should have zoomed in sections with matchlines, as it is an important reference and too small to adequately review.	See response to comment #399.

405	Town of Palm Beach	CSI / Penny Cutt	2.0 Mitigation Site Selection Criteria: This Section states that the selected site will have an "Underlying sediment thickness between 1 and 4ft." However, the proposed boulders will have a maximum diameter of 4ft and as such, may completely subside. It is understood that the artificial reef will be replicating ephemeral hardbottom; however, if the artificial reef is buried, then it is not replacing lost aquatic functions and values. Please discuss how maintenance of the required sand/hardbottom ratio will be ensured over time.	As stated in Section 2.2, "the final site determinations will be based on additional surveys and on final mitigation conditions which will be required by project permits." Monitoring the artificial reef over time will reveal any subsidence. A contingency plan has not bee discussed with the regulatory agencies at this time.
406	Town of Palm Beach	CSI / Penny Cutt	*2.2 Proposed Mitigation Sites:* This Section refers to "The Town of Palm Beach County's mitigation reef'; please clarify. This Section also states that the proposed mitigation reef will consist of one layer of limestone boulders measuring 4 ft. in maximum diameter. With 1 to 4 feet of sand over the hardbottom, much of the artificial reef may completely subside. Also with the increase of sand in the littoral system and natural movement of sand, the boulders may be buried. What controls and contingency is proposed to ensure mitigation success?	The text was revised to say the "Town of Palm Beach's mitigation reef." See response to Comment #405.
407	Town of Palm Beach	CSI / Penny Cutt	*Figure 2.1:* This Figure should depict the hardbottom exposure for each of the past 10 years to visually assess whether the artificial reefs are proposed over hardbottom that may naturally become reexposed in the foreseeable future. It would be helpful to understand when the hardbottom in mitigation sites was last exposed and how often it was exposed over the past 10 years.	Figure 4-1 was added to present a selection of hardbottom delineations between 2003 and 2014.
408	Town of Palm Beach	CSI / Penny Cutt	3.0 Site Protection Instrument: Please clarify what is meant by the statement "The USACE will have access to the mitigation site subsequent to the issuance of a Department of the Army permit."	Text ha been clarified.

409	Town of Palm Beach	CSI / Penny Cutt	*4 . 1 Impact Site* : This Section states that the Project "may result in permanent impacts to 4.03 ac of hardbottom as well as temporary and secondary impact to 8.13 ac of hardbottom ... "This sentence should be rewritten to clearly state that the Project will result in permanent and temporary impacts to hardbottom. As it appears the Draft Compensatory Mitigation Plan is speaking to the Applicant's Preferred Alternative, specific acreages can also be included. This Section refers to the time average of exposed hardbottom with no explanation as to how the exposure was averaged over time. This Section states that the USACE will coordinate with NMFS for potential impacts; this Section should also indicate that the USACE will coordinate with the US FWS for potential impacts to federally listed species under their purview, as the Statewide Programmatic Biological Opinion does not cover groin construction.	Section 4.2 provides the mitigation area acreages. Section 4.1 in Appendix I was revised to include details on the impact assessment conducted in GIS using the Delft3D modeling results and the time-average methodology. Reference to USFWS was added.
410	Town of Palm Beach	CSI / Penny Cutt	*4.2 Mitigation Sites:* This Section again refers to the "Town of Palm Beach County"; please clarify. This Section should include a discussion about the frequency and duration of past hardbottom exposure in the areas selected for artificial reef siting. This discussion should assess the likelihood of hardbottom re exposure in these areas in the foreseeable future. There should also be a discussion about whether any projects are proposed landward of these areas that may result in impacts to the artificial reefs if the projects are constructed in the future.	The text was revised to say the "Town of Palm Beach's mitigation reef." Language was added to consider historic hardbottom locations in the final mitigation sites.
411	Town of Palm Beach	CSI / Penny Cutt	5.0 Determination of Credits: This Section should include a discussion about the difference between the federal discount rate and the state discount rate and how this may affect the amount of required mitigation.	Text was added to 5.0 referencing the difference between the state and federal UMAM requirements.
412	Town of Palm Beach	CSI / Penny Cutt	7.0 Maintenance Plan: Please provide details as to what will be done during the referenced mid construction survey. In addition to the post-construction survey elements presented in this Section, the edge of the artificial reef should be delineated during each survey to evaluate potential burial due to entrapment of sediment by the boulders (or scour) depending on wave energy in the area. Also the total acreage of functional artificial reef cannot be determined by the edge of the artificial reefs, as the interior may be substantially buried and inadequate to offset functional losses; therefore, an additional assessment method must be employed to evaluate total acreage.	Mid-construction observations will likely be conducted to ensure spacing and layout are as designed. Line-intercept surveys will likely be required to ensure the rock to sand ratio meets the design.
413	Town of Palm Beach	CSI / Penny Cutt	8.0 Performance Standards: This Section states that success will be achieved "when" the benthic community and colonization have been documented to be comparable; however, the reef may achieve comparable colonization within the 3 year period and then be buried for an extensive number of years if it is truly comparable to the impacted ephemeral hardbottom. As a time average was utilized to quantify the hardbottom that must be mitigated for, a time average should be utilized to ensure that the mitigation is providing adequate aquatic functions and values in the long term.	

414	Town of Palm Beach	CSI / Penny Cutt	*9 . 1 Mitigative Artificial Reef Monitoring:* The boundaries of the artificial reef should be mapped during each monitoring event to evaluate whether the edges of the reef are being subjected to accretion of sand or burial by natural sand waves (or scouring out hardbottom in the vicinity).	
415	Town of Palm Beach	CSI / Penny Cutt	11 .0 Adaptive Management Plan: This Section states that the Applicants will not be responsible for reparations due to acts of nature; however, typically applicants are responsible for ensuring the success of mitigation projects until they achieve the prescribed success criteria, even if there are impacts due to acts of nature. Adaptive management should also suggest things like transplanting opportunistic corals to the artificial reefs to enhance them if they are not trending towards success.	
416	Town of Palm Beach	CSI / Penny Cutt	*SubAppendix I-1: Figure 1:* This Figure would benefit from a legend to define the different cross hatching for the artificial reef modules. Also, this Figure only presents one year of hardbottom exposure; as the area is known to be ephemeral, it would be helpful to see hardbottom exposure over time. If the area is likely to be re-exposed in the near future, it may not be optimal to locate artificial reefs here.	This figure was provided by the Town of Palm Beach and is not editable. Figure 3-2 in the EIS provides multiple years of hardbottom exposure.
417	Town of Palm Beach	CSI / Penny Cutt	*SubAppendix I-1: Figure 2:* This Figure depicts stacked boulders; however, the text states that boulders will be placed in a single layer. This Figure also states that the boulders will provide 1 ft to 4 ft of vertical relief, but then states 6 ft maximum. Should this range be 1 ft to 6 ft? The proposed spacing between modules is not provided on the drawing.	The figure is provided as an example but the boulders will be placed in a single layer with a maximum diameter of 4 ft and at least 6 ft clearance.
418	Town of Palm Beach	CSI / Penny Cutt	*SubAppendix I-2: Figure 5:* This Figure states that boulders will be placed in a minimum depth of -6 ft ML W; however, Figure 4 indicates that boulders will be placed in water depths ranging between -6 ft and -12 ft NGVD. Although Figure 4 is not to scale, it depicts boulders nearly reaching the water surface.	See response to Comment #417.
419	Town of Palm Beach	CSI / Penny Cutt	**Appendix J:** 1.0 Introduction**:** This Section should include a discussion about coastal structures. There are existing structures within the Project area, the Project proposes additional structures, and based upon the precedent set by permitting structures for this Project, there is potential for more structures within Palm Beach County and along the southeast coast of Florida. This Section should also discuss the Town's plans to repair and/or remove some of the existing structures.	The Introduction describes the purpose of the CIA document. The groins are described in Section 1.1.2. Section 5.5 of the CIA discusses the Town's groin rehabilitation plan
420	Town of Palm Beach	CSI / Penny Cutt	*1.1 Project Description:* This Section refers to the time average of exposed hardbottom delineated from aerial images between 2003 and 2013 without providing an explanation as to how this average was calculated.	See response to Comment #197.

421	Town of Palm Beach	CSI / Penny Cutt	*Figure 1.3:* This Figure is difficult to review; zoomed in sections should be provided with matchlines.	See response to Comment #399.
422	Town of Palm Beach	CSI / Penny Cutt	*1.1.2. Groin Construction:* This Section, as well as other Appendices, references the potential for groins to be constructed from the water. The equipment and construction methodology should be presented here and the potential ecological effects should be discussed.	Added text to present equipment and construction methods that may be used.
423	Town of Palm Beach	CSI / Penny Cutt	2.0 Scope of Analysis: *Figure 2.1* This Figure makes it look like only Reach 5 is located within the Town of Palm Beach. This Figure should be revised to properly depict the limits of the Town of Palm Beach.	The black bracket bar shows the limits of each municipality. This figure was extracted from the BMA (FDEP, 2013).
424	Town of Palm Beach	CSI / Penny Cutt	*Figure 2.2:* This Figure is missing a page number.	The page number was added.
425	Town of Palm Beach	CSI / Penny Cutt	*2 . 3 Resources within the Cumulative Impact Analysis Area: Water Quality:* This Section should discuss turbidity associated with Project equilibration; post construction turbidity would be anticipated to persist for a longer duration when utilizing an offshore sand source.	Text was revised to indicate that turbidity is anticipated to return to ambient levels immediately following construction.
426	Town of Palm Beach	CSI / Penny Cutt	*2.4 Actions Affecting the Resources, Ecosystems, and Human Communities of Concern:* This Section indicates that beach lighting surveys and follow-up measures to reduce beach lighting impacts will be conducted; however, this has not been presented elsewhere within the document. These activities will help mitigate effects to nesting and hatchling sea turtles and should be presented as such throughout the DEIS and Appendices as appropriate.	This is required by the USFWS SPBO and is mentioned in Section 5.2.8 of the EIS.
427	Town of Palm Beach	CSI / Penny Cutt	3.0 Affected Environment: This Section presents the range of hardbottom exposed over time within the Project area as between 3.06 ac in 2009 and 51.20 ac in 2006. This Section also indicates that the time averaged acreage of exposed hardbottom during this time period is 25.37 ac. The most recent delineation from 2013 aerials revealed that approximately 39.26 ac ofhardbottom was exposed in this area. How was the time averaged acreage of hardbottom quantified and where is it located? If this time averaged area of exposed hardbottom was utilized for modeling impacts to hardbottom within the ETOF, then the polygons must have been identified. Please provide a figure depicting the location of the time averaged exposed hardbottom polygons.	See response to Comment #197. The polygons respresent accumulation polygons from the Delft3D modeling. The hardbottom delineation was updated to include 2014 but does not represent the time-averaged hardbottom. The time-averaged hardbottom is a calculation and not representd by a polygon.
428	Town of Palm Beach	CSI / Penny Cutt	*3 . 2 Stresses Affecting R e sources , Ecosystems, and Human Communities and their Relation to Regulatory Thresholds:* The mixing zone size should be discussed when referencing turbidity and State standards.	Included language about mixing zones. The size of the mixing zone has not been established.

429	Town of Palm Beach	CSI / Penny Cutt	*3 . 3 Baseline Conditions for Resources, Ecosystems, and Human Communities:* This Section again references the time averaged exposure of hardbottom, as well as the maximum exposure of 51.20 ac and minimum exposure of 3.06 ac. How was the location of the time average hardbottom determined to create the polygons used for modeling? The DEIS and Draft Cumulative Impact Analysis refer to the 17.1 sq ft of persistent hardbottom within the Project area; however, there are no references to the cumulative acreage of ephemeral hardbottom that has been exposed at any given time during the 10 year period assessed. This area is presumed to be greater than 51.20 ac; this information would be helpful for reference. It would also be helpful to see a polygon inclusive of all hardbottom exposed over the time range being evaluated (2003- 2013). This Section states that "Baseline conditions for marine turtle nesting activities have been previously established through mostly annual monitoring conducted in Palm Beach County since before 1980. Please explain how "mostly annual monitoring" can establish baseline conditions.	See response to Comment #427. The maximum extent of hardbottom exposed in the Study Area (R-127 to R-141) is 115.3 acres, which was added to Section 3.2.2.4 of the EIS. A figure was not generated with this area though as it did not seem to contribute to the discussion. Annual monitoring has been conducted regularly since before 1980 along much of Palm Beach County's shoreline; however, additional short term surveys also contributed to the baseline conditions.
430	Town of Palm Beach	CSI / Penny Cutt	*4.2 Magnitude and Significance of Cumulative Effects:* This Section refers to the 10 year time average analysis of hardbottom without presenting the methodology for how this was done. To properly evaluate the magnitude and significance of cumulative effects, it would be helpful to understand the cumulative exposure of hardbottom over the ten year period evaluated, not just the minimum and maximum acreage of hardbottom exposed in any of the years reviewed. This Section also states that " ... the Proposed Action should act to better ensure the beach compatible quality of the placed sand through the placement of high quality sand from offshore sand sources that has been successfully used on the adjacent shorelines." This statement implies that all sand placed for the Project should be from offshore sand sources; however, some of the sand will be from high quality upland sources. This Section should explain the difference between the sand specification for dune restoration and the sand specification for beach restoration. This would support the assertion that " ... the Proposed Action should act to better ensure the beach-compatible quality of the placed sand ... "	See response to Comments #197 and 429. The text was revised to include upland sand.
431	Town of Palm Beach	CSI / Penny Cutt	*5.4 Phipps Ocean Park Beach Restoration Project:* This Section should reference the use of Lake Worth Inlet bypassed sand as a potential sand source for the Phipps Ocean Park project. This Section states that "The Phipps Ocean Park beach Restoration Project includes periodic dune restoration south of the Lake Worth Pier in Reach 8. The dune-only portion, from R-129 to R-134 (within Reach 8), will be constructed to an elevation of +10 feet NAVD with a 1V:3H slope." This text should be moved to a separate section for Reach 8 rather than presented under 5.4 Phipps Ocean Park Beach Restoration Project.	No information could be find to justify the use of bypass sand as a potential sand source for Phipps. Since the authorization to dredge excess sand for transport to Reach 8 is covered under the Phipps permit, this language was kept in section 5.4 of the CIA; however, some text was added for clarification.
432	Town of Palm Beach	CSI / Penny Cutt	*6. 2 Approved Mixing Zones:* This Section should reference the approved mixing zone for the Town portion of the Project.	Included language about mixing zones. The size of the mixing zone has not been established.
433	Town of Palm Beach	CSI / Penny Cutt	There is a List of Abbreviations provided on pages xxiii through xxvi. As such, it is not necessary to define abbreviations throughout the documents. Where acronyms are defined throughout the DEIS and the Appendices (including Figures and Tables), they are inconsistent.	Revised thoughout.

434	Town of Palm Beach	CSI / Penny Cutt	Acronyms that have already been defined in the text (e.g. Environmental Impact Statement is redefined in section 12) do not need to be defined again	Revised thoughout.
435	Town of Palm Beach	CSI / Penny Cutt	Southern Palm Beach Island Comprehensive Shoreline Stabilization Project is referred to as "the Project", "Project", "project", and spelled out	Updated EFH and BA.
436	Town of Palm Beach	CSI / Penny Cutt	Draft Environmental Impact Statement is referred to as "Draft EIS", "DEIS", "draft EIS", and "EIS"	Revised thoughout.
437	Town of Palm Beach	CSI / Penny Cutt	Florida Department of Environmental Protection Reference Monuments are referred to as "FDEP R Monuments" and "FDEP Monuments"	Revised thoughout.
438	Town of Palm Beach	CSI / Penny Cutt	Latin names of genus and species are not consistently italicized	Revised thoughout.
439	Town of Palm Beach	CSI / Penny Cutt	Capitalization for common terms is inconsistent (e.g. High Tide Line and high tide line)	Revised thoughout.
440	Town of Palm Beach	CSI / Penny Cutt	The I in island should be capitalized when referring to Palm Beach Island	Revised thoughout.
441	Town of Palm Beach	CSI / Penny Cutt	References to the Town of Palm Beach versus TOPB (e.g. 4.28.1.1) are inconsistent	TOPB references were changed to the Town of Palm Beach.
442	Town of Palm Beach	CSI / Penny Cutt	There are multiple instances throughout the DEIS with inconsistent terminology (i.e. retaining wall, bulkhead, seawall).	Revised as appropriate throughout.
443	Town of Palm Beach	CSI / Penny Cutt	Ordering of units is inconsistent [e.g. #ft (#m) versus #m (#ft)]	Revised thoughout.

444	Town of Palm Beach	CSI / Penny Cutt	Most of the Figures refer to "FDEP Monument" but the text of the documents refers to "FDEP R-Monument"	Revised thoughout.
445	SOS	Richard Manno	We do not wish anything that would: diminish our safetly; place our building at increased risk; decrease the width of the seashore to the east of our building; lead to a deterioration of the ocean condition which we currently enjoy suitable for older citizens; or otherwise decrease the value of our buidling. In particular we want to address in writing a problem which we noted and commmented in an earlier document which may or may not appear in your current document. The prior document proposed beach nourishment from a point south of us (~ mile) northward towards us until a point perhpas 100 ft south of us. At that point, in a quarter-circle-arc, the beach nourishment tapered rapidly towards us and our existing shoreline, leaving negligible-or-no-beach-widening in front of us or our northern neighbor. Our problem with that was/is twofold: (A) we are concerned with a "funnel-effect" in the event of a storm; (B) we are concerned with the potential economic impact on our buildiing in competition with other buildings when our owners want to sell, if our beach is narrower than all those within a few miles; (C) we are concerned that the potential of a "funnel effect" may lower our property value whether a storm hits or not.	
446	SOS	Dominic DeFilippo	The materials they propose to use are incompatible with the native sand of the Town's beaches and dunes...As I understand it, if this is about cost and not sound solutions, mined sand is available at approximately the same cost as dredged sand...You, the U.S. Army Corps, are under a duty and have the responsibility to stop this flagrant abuse of the Town's discretionary recommendations when they clearly clash with the Court's Findings and Order...	See response to Comments #9, 11 and 45.
447	SOS	William McVeigh	I object to the use of any sand that is not mined sand in constructing a contiguous beach nourishment proejct from Bellaria Condominium to La Bonne Vie in Reach 8. I request that the USACE study all Reach 8 alternatives, including the originally submitted SOS Beach Nourishment Plan with both Ortona and Steward mined sand. Those of us in Reach 8 need a project studied, like the Erickson designed SOS beach nourishment project that provides 25-year storm protection.	See response to Comments #10, 11 and 49.
448	SOS	Bernice Sklar	It is imperative that the south end shoreline, where there has never been any beach nourishment on our critically eroded beaches, like Reach 8 where I live, obtain 25 year storm protection level for the entire stretch of shoreline and our upland properties. ... I write to you insisting that the Coalition to Save Our Shoreline (S.O.S.) alternative is re-studied using the correct grain size mined sand, the proper data that will give true readings and that you also study the possibility of groins with and without to determine the level of protection it provides to our properties. Compare the environmental impacts, the life of the project and the estimated costs to the Town's alternative with the dredged sand. As suggested in Town Manager, Tom Bradford's memo dated January 22, 2015...	See response to Comments #10, 11 and 49.
449	SOS	Bernice Bindman	We require a wide beach and dunes, which we did have many years ago. Now apparently, our Town has asked you to switch out using mined sand like Palm Beach County to our south and replace it with offshore sand similar to what they used in the past. You had no right to agree to do such a thing, but apparently you did. That is questionable in its legality, because the public like me were told otherwise by the Army Corps as the EIS began. There is much talk about "mitigation" and its costs. If you use the mined sand that the SOS organization has been advocating for and provide beach restoration projects with designed beaches to absorb the wave action and dunes as the last line of defense- - it will benefit the turtles and the sea life and our beaches will be back in their original natural state which will help the environment and it will prevent the severe erosion that has been allowed to worsen through neglect over the years	

450	SOS	Phyllis Kuby	In order for this to occur we need the proper kind of sand (upland mined sand of coarser and larger grain size as is compatible with our native unnourished severely eroded beaches) and beach nourishment, which provides us the ability to survive as those living on the shoreline. The Army Corps of Engineers is comprised of intelligent people. I'm sure you will come to this same conclusion that I have and provide a continuous beach nourishment project in Reach 8 that gives us all rich beaches and dunes using a mined upland sand source that protects our properties and gives us back our precious beaches.	
451	SOS	Carol Kosberg	Why is the USACE endorsing 15 yr storm protection that is dunes only for Reach 8 in a Town that provides 25 yr storm protection to othe shoreline areas in the Town? ...the SOS plan for Reach 8 uses coarse sand and it is the only alternative that will protect our properties and will greatly diminish the erosion that has been allowed to occur because of deliberate neglect which as caused hard bottom to be exposed. Hard bottom, which has been used as an excuse by the Town for not nourishing Reach 8' s beaches, exists along the entire coast of Florida, possibly the entire eastern seaboard and is certainly not unique to Reach 8. Yet, Mid-Town Beach, which also has hard bottom, as well points north and south of it, has had their beaches renourished at least five times. Ocean Ridge and Delray Beach have been repeatedly renourished with their hard bottom issues ignored. However, Reach 8 continues to be neglected by Palm Beach which only causes more hard bottom to be exposed. The refusal by the Town, using various excuses to design a continuous beach nourishment project for Reach 8 using coarse quality mined sand creates a self defeating prophecy for the erosion and for the taxpaying citizens that have huge investments along the shoreline.	See response to Comments #1, 10, 16, and 45.
452	SOS	Dean Sovey	I believe it to be your responsibility as the paramount governmental agency to make sure that the SOS alternative that was never studied as it was submitted in your EIS draft, be modeled with Ortona mined sand and coastal structures and report to the public and our Town: the storm protection level with all of benefits that we will derive; the length of the life of the project; contrast it with the costs as related to what is currently being paid with all of the expenses of the dredged Mid-Town beach fine sand and the environmental impacts that dredged beach nourishment sand may cause. To summarize, I am adamant that only mined sand be used for a contiguous beach nourishment project in Reach 8 in the Town of Palm Beach. Model the Save our Shoreline's SOS project including structures with Ortona mined sand. Please assure us that all the properties are provided 25 year storm protection. Do not violate Judge Meale's order.	See response to Comments #1, 9, 10, and 49.
453	SOS	Madeline Shapiro	The Town of Palm Beach, however, has submitted a dune restoration plan with one small area of beach fill to the USACE to be studied in the EIS that provides only 15 year storm protection. In direct contrast to this plan, I am aware that the Save our Shoreline Coalition (SOS) submitted a Reach 8 beach nourishment plan for 25 year storm protection to the USACE to be studied in the EIS. Should the USACE choose a dune restoration only project for most of Reach 8 as recommended by the Town instead of contiguous beach nourishment? The facts of nature, science and the FDEP show otherwise!	See repsonse to Comments #1, 10, and 49.
454	SOS	Roberta Kahan	The only letter that takes precedence here is the April29, 2014 letter which was taken after a legally binding Town Council vote. For the USACE to have altered in any way, the only plan for 25-year storm protection, which we know for a fact was the SOS Beach Nourishment Plan and Design for Reach 8, is not only unconscionable but is highly questionable and inappropriate. When the EIS draft came out, it became obvious that the USACE did not "give equal consideration" to a plan of 25-year storm protection because the EIS did not study the plan as it was given to the Corps by the SOS. By the USACE allowing the EIS engineering consultant, CPE to switch out the original SOS plan and replace the sand quality that was submitted, which was "Ortona" mined sand, instead for fine dredged sand, you corrupted the outcome of the EIS draft study for the SOS 25-year storm protection beach nourishment plan and design. That must be rectified immediately when you complete your EIS modeling and study. The EIS needs to reflect the accurate data and truly give the 25-year storm level of protection "equal consideration" as the plan and design were submitted to the USACE. Just as there was no consideration for groins as the SOS plan also submitted for study as a part of any alternative for the Town of Palm Beach. That should also be studied as another possible alternative, but was not.	See response to Comments #1, 10, 49, and 54.

455	SOS	Terri Rovelli	(1) Request 30 days extension of comment period; (2) The Corps needs to promote and only consider a plan that calls for 25 year storm protection for entire coastline; (3) It is my understand that the 15 year storm protection plan presently under consideration does not protect my property from hurricane force winds; (4) The Corps needs to promote a plan that calls for mined sand with adequate sand dimensions; (5) The Corps needs to consider a plan which calls for groins in Reach 8 - a plan that was submitted to the Corp by Erickson Consultants - a requirement that was either inadvertently or purposely elimated from the plan that the Corp analyzed.	See response to Comments #9, 10, 11, and 49.
456	SOS	Michael Grady	(1) Request 30 days extension of comment period; (2) The Corps needs to promote and only consider a plan that calls for 25 year storm protection for entire coastline; (3) It is my understand that the 15 year storm protection plan presently under consideration does not protect my property from hurricane force winds; (4) The Corps needs to promote a plan that calls for mined sand with adequate sand dimensions; (5) The Corps needs to consider a plan which calls for groins in Reach 8 - a plan that was submitted to the Corp by Erickson Consultants - a requirement that was either inadvertently or purposely elimated from the plan that the Corp analyzed.	See response to Comments #9, 10, 11, and 49.
457	SOS	Joel Berg	(1) Request 30 days extension of comment period; (2) The Corps needs to promote and only consider a plan that calls for 25 year storm protection for entire coastline; (3) It is my understand that the 15 year storm protection plan presently under consideration does not protect my property from hurricane force winds; (4) The Corps needs to promote a plan that calls for mined sand with adequate sand dimensions; (5) The Corps needs to consider a plan which calls for groins in Reach 8 - a plan that was submitted to the Corp by Erickson Consultants - a requirement that was either inadvertently or purposely elimated from the plan that the Corp analyzed.	See response to Comments #1, 9, 10, and 49.
458	Town of Palm Beach	Thomas Bradford	SOS Exhibit 1: Regardless of the results of the Federal EIS process, pursuing a State permit for a project that is contradictory to the Administrative Law Judge's decision will be difficult.	
459	SOS	Richard Hunegs	SOS Exhibit 2: Surfrider Foundation, Inc. and City of Lake Worth and Eastern Surfing Association, Inc. versus the Town of Palm Beach Court Decision.	
460	SOS	Richard Hunegs	SOS Exhibit 3:On behalf of the organization, the Coalition to Save Our Shoreline (SOS), as we as the more than 6,000 people whose voices we carry and as qualified stakeholder in these proceedings, we offer and submit the Coalition to Save Our Shoreline (SOS) Reach 8 Plan & Design to be reviewed and studied as an alternative for the Reach 8 beach nourishment project and as part of the record for the Environmental Impact Statement to be conducted for Reach 8 in the Town of Palm Beach and also to be included in Palm Beach County's Southern Palm Beach Island Comprehensive Shoreline Stabilization Project in Palm Beach County for Reaches 8, 9, and 10.	See repsonse to Comments #10, 49, and 54.

461	SOS	Bukk Carelton	SOS Exhibit 4: In light of these conditions, Mr. Carleton remains baffled as to why the Town of Palm Beach ("Town") would chose to adopt "Alternative 2" within the Draft EIS as its "Preferred Project Alternative" when such Alternative: a) only provides for dune restoration which (at best) provides a 15 Year Storm Protection, while the Town has consistently provided for beach nourishment which provides a 25 Year Storm Protection to the beaches and residents in other areas of the Town; b) utilizes an inferior quality of sand, which requires more sand to be used, and will result future permitting obstacles, if not litigation; and c) is inconsistent (if not incompatible) with the abutting Palm Beach County Plan for the beach nourishment of those portions South Palm Beach, Lantana, and Manalapan included in the Project. By contrast, after reviewing the various "Alternatives" and proposals provided to the US Army Corps of Engineers ("USACE"), the proposed plan by the Coalition to Save our Shoreline ("SOS") (the "SOS Plan"), which incorporates the "Beach Nourishment Plan and Design for Reach 8" prepared by Karyn Erickson of Erickson Consulting Engineers ("ECE"), appears to provide for the maximum protection of the life, safety, and property of those homeowners located along the southern shores of Reach 8. As a result, as detailed below, Mr. Carleton would urge the USACE to adopt the SOS Plan as the Preferred Alternative for dealing with those portions of the Project located within the Town. In the end, the SOS Plan: a) provides a 25 Year Storm Protection for the residents of Reach 8 which is comparable to the protection provided to other waterfront residents in the Town; b) provides for the use of superior upland, mined sand which does not wash away as quickly, does not require any "overfill", and reduces the adverse environmental impacts associated with dredged materials; c) avoids even the potential of a challenge and/or lawsuit by outside third parties such as the Surfrider Foundation; and d) complements the abutting plan of the County in a manner which avoids the potential for an adverse cumulative effect between two disparate plans. As a result, Mr. Carleton would urge the USACE to adopt the SOS Plan as the Preferred Alternative for those portions on Reach 8 within the Project in its Final EIS.	See response to Comments #1, 9, 10, 16, and 49.
462	Town of Palm Beach	Gail Coniglio	SOS Exhibit 4: This letter is in furtherance of my letter dated April 10, 2014, to you regarding the EIS for Reach 8 south (SAJ-2005-07908). At a Town Council meeting on April 8, 2014, the Coalition to Save Our Shoreline (an organization of Palm Beach residents) asked the Town Council to formally request your USACE team to give equal consideration to 25-year storm protection to the upland properties of the project shoreline of Reach 8. After discussion, the Town Council agreed to that. This was intended to reflect the Town's desire and intent for USACE to maximize the opportunity for the Town to provide storm protection in Reach 8.	See response to Comments #1 and 10.
463	SOS	Palm Beach Daily News	SOS Exhibit 4: Palm Beach Daily News excerpt highlighted - "Elwell told the Town Council on Thursday that the town is ready and able to restore damaged dunes by hauling sand in by truck from the Ortona mine and placing it where needed [on] the beach."	
464	Town of Palm Beach	Gail Coniglio	SOS Exhibit 5: This letter is in furtherance of my letter dated April 10, 2014, to you regarding the EIS for Reach 8 south (SAJ-2005-07908). At a Town Council meeting on April 8, 2014, the Coalition to Save Our Shoreline (an organization of Palm Beach residents) asked the Town Council to formally request your USACE team to give equal consideration to 25-year storm protection to the upland properties of the project shoreline of Reach 8. After discussion, the Town Council agreed to that. This was intended to reflect the Town's desire and intent for USACE to maximize the opportunity for the Town to provide storm protection in Reach 8.	See response to Comment #1 and 10.

465	SOS	Bukk Carelton	SOS Exhibit 6: In the present case, as you can imagine, after two weeks of testimony and a 578 paragraph Recommended Order by an Administrative Law Judge finding that dredged sand from borrow sites with a mean grain size of 0.22 mm is incompatible with the mean grain size on Reach 8, Mr. Carleton is less than confident that the Town's choice of offshore dredged sand with a mean grain size of 0.25 mm (i.e. an increase of only 0.03mm) will somehow be found to be compatible by not only the FDEP and the USACE, but also by the third parties such as the Surfrider Foundation and prior Petitioners who could easily launch a new legal attack which would result in the expenditure of additional unnecessary time, effort and money. By contrast the upland, mined sand proposed to be used by Palm Beach County for its portion of the Project has a mean grain size of 0.33 mm, which is much closer to the native beach and would create far fewer of the "adverse effects" found by Judge Meale to require the denial of the Town's prior permit. Unfortunately, neither the Town nor the USACE has ever even studied the potential use of upland, mined sand for the Town's portion of the Project, despite the fact that the Town itself originally requested the use of mined sand for Reach 8 as part of its USACE Application. In light of the above, it would seem that prior to making any "public comment" to the USACE, much less making a final selection of its "preferred alternative" under the Draft EIS, the Town should at least request a thorough study and evaluation of the potential use of upland, mined sand for the Town's portion of the Project. Failure to do so will necessarily result in the Town making a critical decision affecting the life, safety and property of thousands of residents along the shores of Reach 8 based upon incomplete data and information.	See responses to Comments #1, 9, 10, 49, and 54.
466	SOS	Bukk Carelton	SOS Exhibit 7: In light of the fact that: a) the Town's Preferred Alternative could easily run afoul of Judge Meale's decision; b) the effective cost of upland sand is actually less than the use of dredged sand; c) the use of upland sand will not result in any "additional delay", and in fact may be welcomed by the USACE: and d) in the interim upland, mined sand could be used in Reach 8 for dune restoration while a study is performed for the placement of a larger amount of sand, it would seem that clear that prior to making any "public comment" to the USACE, much less making a final selection of its "preferred alternative" under the Draft EIS, the Town should at least request a thorough study and evaluation of the potential use of upland, mined sand within Reach 8. Failure to do so will necessarily result in the Town making a critical decision affecting the life, safety and property of thousands of residents along the southern shores of the Town based upon incomplete data and information.	See responses to Comments #1, 9, 10, 45, and 49.

467	SOS	Bukk Carelton	SOS Exhibit 7: Email from Eubanks to Dan Bates (PBC ERM): Madelyn Greenberg gave me your name, e-mail and number (which I called but got no answer). I represent one of the many Town residents living in that portion of Reach 8 which is the subject of the most recent USACE Draft EIS (SAJ-2005-07908). As you may know, in conjunction with its most recent request for extension of the Public Comment Period the Town and Town Staff have made a series of representations which both the SOS and my client find troubling, including that "dredged sand" can be had for $19 per cubic yard while upland, mined sand will cost $40 per cubic yard. My client has been attempting to track down written documents demonstrating these figures are incorrect. As a result, could you please provide me with a copy of any recent invoices which the County may have which would reflect the price of upland, mined sand as delivered as well as any estimate you may have already been given by way of public invitation to bid or otherwise for the Reach B project. In addition, I would also greatly appreciate any information which you may have which would show a comparison for dredged materials for the same projects. My concern is that the Town is failing to include a number of potential costs within its estimate. The second statement made by the Town Staff (which my client takes issue with is that the Town standard of 0.25 mm grain size is the highest in the area including the County standards. My understanding from the Technical Specifications included within the Draft EIS, however, is that the County requires a mean grain size of 0.30 to 0.70mm. As a result, I would also greatly appreciate any documentation which sets for the required technical specifications used by the County including for the Reach 8 Project.	
468	SOS	Bukk Carelton	SOS Exhibit 7: Email from Bates to Eubanks: The attached provides our sand specifications and purchase/placement contract for mined sand. Our estimated cost/cu. yd. for the South Palm Beach project is ~$28 of sand with an average grain size of .33mm	
469	SOS	Bukk Carelton	SOS Exhibit 7: Email from Eubanks to Bates: (1)Are there any items which are special to the County's project which would skew the County's price of sand (i.e. bulk discount etc.)? (2) Do the same Technical Specifications set forth in the Annual Dune and Wetlands apply for all County Projects? (3) Do you have a written estimate for the apporox $28 per cu yard of sand with an average grain size of 0.33 mm for the South Palm Beach project?	
470	SOS	Bukk Carelton	SOS Exhibit 7: Email from Bates to Eubanks: Response to above. (1) No, any govt can piggy-back off this contract. (2) Yes. (3) No, the estimate is based on the ton/miles per the contract and that is the sand size we are now placing on Singer Island & Jupiter beaches.	
471	SOS	Bukk Carelton	SOS Exhibit 7: Email from Eubanks to Bates: Can you please provide me with a couple of quick clarifications as to the estimated $28 per cubic yard cost for sand to be purchased by the County for the South Palm Beach Project? As you may have heard, at Friday's Shore Protection Board in the Town of Palm Beach, the Director of Public Works, Mr. Brazil, indicated that the price of $28 per cubic which you have cited was for delivery to Singer Island not South Palm Beach. As a result, he indicated that the actual cost "would be much higher." From your e-mail below it appeared that the estimated cost was for delivery to the South Palm Beach project. Can you clarify whether the price was to Singer Island or South Palm Beach? In addition, in making a series of assertive questions to Ms. Erickson at Friday's meeting, Mr. Brazil also inquired whether she knew that the County's underlying Contract had been "renegotiated" and that as a result the cost to the County per cubic yard of sand increased by $1 per yard. Can you tell me if in fact the Contract has been renegotiated, and even if it did would any resulting increase be included within the estimated cost of $28 per cubic yard for the South Palm Beach Project. Thank you.	
472	SOS	Bukk Carelton	SOS Exhibit 7: Email from Bates to Eubanks: Response to above. Yes, $28/yd to SPB and renegotiated down, not up.	

473	SOS	Bukk Carelton	January 8, 2015 letter from Eubanks to E. Llwyd Ecclestone (sent as an attachment to a January 22, 2015 email): It was clear from those in attendance that the vast majority of the public speakers echoed a series of similar concerns, including, but not limited to: (a) The desire for the Town to choose a Preferred Alternative which provides the same 25 Year Storm Protection enjoyed by the rest of the beaches in the Town and includes both dune restoration as well as beach nourishment, as opposed to a dune restoration only plan which would provide (at best) for a 15 Year Storm Protection.	
474	SOS	Bukk Carelton	(b) The desire for the Town to choose a Preferred Alternative which includes the use of higher quality upland, mined sand (which has a large mean grain size), as opposed to a plan which relies upon inferior dredged sand (with a much smaller grain size), results in the need for a huge overfill factor, washes away quicker, and would create adverse environmental consequences.	
475	SOS	Bukk Carelton	(c) The concern that the Town's use of dredged materials for Reach 8 will simply result in a repeat of the waste of time, effort, and substantial Town funds which occurred as a result of the Surfrider Foundation litigation, in which the Administrative Law Judge ruled against the Town, and made detailed findings of fact adverse to the use of offshore sand within Reach 8.	
476	SOS	Bukk Carelton	(d) The concern that the Town's Preferred Alternative is not up to the same quality, and does not provide the same level of protection, as the County's Plan, coupled with inquiries as to why the Town does not work with the County to not only make sure that the projects are compatible, but also to potentially realize a greater economy of scale in the purchase of sand.	
477	SOS	Bukk Carelton	The issues identified included, but were not limited to: (a) The fact that the draft EIS was compiled without sufficient stakeholder involvement and participation, and then released on the eve of the holiday season, making it virtually impossible to digest (much less respond to) its 1,500 pages by the end of the Public Comment period on January 25,2015.	See response to Comment #51.
478	SOS	Bukk Carelton	(b) The fact that there is insufficient or unclear information contained within the EIS to perform precise hardbottom mitigation calculations.	
479	SOS	Bukk Carelton	(c) The failure of the EIS to take into consideration the Town's written request contained within its April 29, 2014 correspondence to "give equal consideration to 25 year storm protection to the upland properties of the project shoreline of Reach 8".	See response to Comment #1.
480	SOS	Bukk Carelton	(d) The fact that the Town's own modeling for the Project was apparently based upon 2011 beach models and profiles which preceded Hurricane Sandy, and as a result did not even take into consideration the massive amounts of sand lost as a result of that storm.	See response comment #60.
481	SOS	Bukk Carelton	(e) The failure to consider, the modification, and/or the misrepresentation of certain portions of the Erickson Consulting Engineers Report, which forms the basis of the SOS Plan, such that it no longer represents what the Erickson Engineers recommended.	See response to Comments #10, 49, and 54.
482	SOS	Bukk Carelton	(f) The potential costs savings of utilizing upland, mined sand when the entire costs of dredged materials is considered (including mobilization and offshore site studies), coupled with the recent 35% reduction in gas prices, which should result in cheaper trucking costs for upland sand, thereby making it cheaper than inferior offshore, dredged sand.	See response to Comment #65.
483	SOS	Bukk Carelton	In light of all of the above concerns, coupled with the fact that three members of the Town Council were apparently unable to attend last night's meeting and hear first hand the issues and concerns of the residents in Reach 8, Mr. Carleton would urge the Shore Protection Board to advise the Town Council to request a thirty (30) day extension to the public comment period for the draft EIS so that sufficient inquiry can be made and information gathered to make the best possible, reasoned response by the Town to the draft EIS.	

484	SOS	Bukk Carelton	January 22, 2015 email from Eubanks to USACE: Picture of Attrium Condominiums after Hurricane Sandy (demonstrating that the mere 15 Year Storm Protection of dune restoration proposed by the Town of Palm Beach will be inadequate to protect such condominiums). Pictures of Claridges Condominium with waves entering its parking lot and pool deck during Hurricane Sandy (demonstrating, once again, the short falls of a 15 Year Storm Protection Plan as opposed to a 25 year Protection Plan which includes both dune restoration and beach restoration/nourishment).	
485	SOS	Bukk Carelton	January 26, 2015 letter from Eubanks to USACE: In that capacity, our office is making a Freedom of Information ("FOIA") records for the following records relating to the Project: (1)Any Permit Application(s), including, but not limited to any attachments or exhibits thereto, filed by the Town of Palm Beach, including, but not limited to, the Town Staff (collectively the "Town") with the United States Army Corps of Engineers ("USACE"), regarding the Project; (2) A copy of any and all information provided by the Town in support of its Permit Application(s), including, but not limited to, any documents, studies, reports, analysis, invoices, pictures, graphs, and/or findings; (3) Any and all documents reflecting the Town's defined "Purpose and Need" for the Project; (4) Any and all documents reflecting the Town's "Preferred Alternative" for the Project; (5) Any an all documents demonstrating that the Town initially proposed an upland, mined sand source for its portion of the Project; (6) Any and all documents reflecting the Town's change in its position or preference from the use of upland, mined sand for the Project to using dredged sand, along with any documents provided to USACE by the Town to reflect the reason for that change in position; (7) Any and all documents reflecting the mean grain size and/or quality of the proposed upland, mined sand initially to be used by the Town, as well as the mean grain size and/or quality of the dredged sand to which the Town switched its preference for its portion of the Project; (8) Any and all documents reflecting the potential turbidity for the use of dredge sand for the Town's p011ion of the Project; (9) Any and all documents reflecting the potential overfill required by the use of dredged sand for the Town's pot1ion of the Project; (10) Any and all analyses performed by USACE examining the potential environmental impact of the use of upland, mined sand for the Town's portion of the Project; (11) Any and all analyses performed by USACE examining the potential environmental impact ofthe use of dredged sand for the Town's pm1ion of the Project; (12) Any and all documents reflecting the potential comparative difference or change in environmental impact between the Town's use of upland, mined sand versus dredged sand for its portion of the Project; (13) Any and all documents reflecting the potential cost of the use ofupland, mined sand for Town's portion of the Project; (14) Any and all documents reflecting the potential cost of the use of dredged sand for the Town's portion of the Project; (15) Any and all documents reflecting the Town's change in position or preference from the use of groins or other stmctures to	The contact information for the USACE's FOIA process is as follows: website - http://www.saj.usace.army.mil/BusinessWithUs/FOIA.aspx phone - (904)232-2477 fax - (904) 232-3692 Please email your request to: foia-saj@usace.army.mil Or simply mail your request to: CESAJ-OC P.O. Box 4970 Jacksonville, FL 32232-0019 Also, here's a link to a sample FOIA request letter you can use to make a request: http://www.usace.army.mil/FOIA/SampleRequestLetter.aspx

486	SOS	Bukk Carelton	January 27, 2015 letter from Eubanks to USACE: Violation of NEPA Requirements for Failure to Schedule New Scoping Meeting After Substantial Changes Were Made to Project by the Town of Palm Beach ("Town") Resulting in Significant New Circumstances Which Directly Bear on Project and its Impact Coupled with Failure to Consider Upland, Mined Sand as One of the Potential Alternatives: In the end, after publishing no less than three (3) notices to the public, as well as making the affirmative representation at the Public Scoping meeting that all sand for the Project was to be sourced from an upland sand mine and accepting public comments which relied upon such representations, it would be a violation of NEPA if the USACE did not start over and hold a new Scoping Meeting which fully, fairly and completely disclosed the Town's change in preference from upland, mined sand to dredged sand. Likewise, it would improper for the USACE to issue a Final EIS without performing an alternative analysis utilizing upland, mined sand for the Town's portion of the Project so that (at a minimum) a side by side comparison can be made in the differences in grain size, compatibility with the natural beach, turbidity, the amount of overfill which may be required, and the resulting impact on the surrounding environment. Failure of the USACE to take these steps will render any result permit(s) vulnerable to a legal challenge which would cost far more in time, effort and money to address than merely holding a new Scoping Meeting, performing a full analysis, and/or making any resulting modifications to the Draft EIS.	The USACEreviewed the issue regarding the change in preferred sand source after scoping and determined that identifying to the public in the DEIS that the applicant has changed its preferred source from scoping is appropriate. The USACE believes that meaningful comments would be generated as a result of public review of the DEIS. Also, see response to Comments #9 and 49.
487	SOS	Bukk Carelton	January 27, 2015 letter from Eubanks to USACE. (Exhibit A): In NOI 78 FR 40128: All sand is proposed to be sourced from an upland sand mine. The Proposed Action consists of the following two projects: The Town of Palm Beach... 74,300 cubic yards of beach quality sand in this area. Palm Beach County...75,000 cubic yards of beach quality sand is proposed to be placed betwen R-134 and R-135+551.	
488	SOS	Bukk Carelton	(Exhibit B): In public scoping meeting notice: All sand is proposed to be sourced from an upland sand mine.	
489	SOS	Bukk Carelton	(Exhibit C): In Public Notice SAJ 2005-07908 and SAJ 2008-04086: All sand is proposed to be sourced from an upland sand mine...The proposal would require approximately 150,000 cubic yards of fill. All sand is proposed to be sourced from an upland sand mine.	
490	SOS	Bukk Carelton	(Exhibit D): In USACE presentation: Upland sand source, truck haul project-150K yards	
491	SOS	Bukk Carelton	(Exhibit E): Surfrider Foundation, Inc. and City of Lake Worth and Eastern Surfing Association, Inc. versus the Town of Palm Beach Court Decision.	
492	SOS	Bukk Carelton	(Exhibit F): Surfrider Foundation, Inc. and City of Lake Worth and Eastern Surfing Association, Inc. versus the Town of Palm Beach Consolidated Final Order.	

493	SOS	Bukk Carelton	January 29, 2015 letter from Eubanks to Town of Palm Beach (sent as an attachment to a January 30, 2015 email): In response, Mr. Weber represented (audio 1:01:29 to 1:02:45) that the cost for the present Midtown Beach nourishment (even after including $5 million in mobilization costs) was $19 per cubic yard. By contrast, Mr. Weber asserted that the cost of mined sand was $40 per cubic yard, however, "it may be an old number, it's possible that it's more, but it's unlikely it would be less, probably more, maybe $40-45 per yard." Mr. Carleton found these representations troubling in that the numbers presented to the Town Council were much higher than the cost for upland, mined sand he had recently read and/or been quoted by others. Given that Palm Beach County is a co-partner in the Project, as set forth in the e-mail string attached hereto, our office contacted Daniel Bates, the Deputy Director of the Palm Beach County Department of Environmental Resources Management, and made inquiry as to both the County's cost of upland mined sand for the Project as well as the quality of such sand. As reflected within Mr. Bates' response not only did he provide a copy of the County's sand specifications and purchase/placement contract for mined sand (which is attached in pertinent part), but he also indicated that "[o]ur estimated cost/cu. yd. for the South Palm Beach project is -$28 of sand with an average grain size of .33 mm." Clearly, this sum is far less than the $40 represented by Mr. Weber. In addition, when the overfill factor (of 2 for this Project) for dredged sand is considered, the cost of utilizing the County's upland, mined sand is lower per cubic yard than the Town's "Preferred Alternative." At the same time, the County is providing a better quality of sand with a mean grain size of 0.33 mm for mined sand versus the 0.25 mm mean grain size for the use of dredged sand within the Town's proposal.	See response to Comments #49 and 65.
494	SOS	Bukk Carelton	January 29, 2015 letter from Eubanks to Town of Palm Beach: As a result, it would appear, from a simple inquiry, and Mr. Bates' straight forward responses, that: (a) The cost for upland, mined sand is not $40-45 per cubic yard, but approximately $28 per cubic yard for the same sand being utilized by the County; (b) The quality of the County's sand (at 0.33 mm mean grain size) is higher than the quality of the Town's proposed dredged sand (at 0.25 mm mean grain size); (c) The County's mined sand is more compatible with the native sand on Reach 8 than the dredged sand proposed by the Town; and (d) The Town could easily "piggy-back" off the County's contract in order to procure the same sand at the same price as the County. In light of the above, Mr. Carleton would urge the Town to refrain from making a final selection of its "preferred alternative" from the six "alternatives" presently outlined within the United States Army Corps of Engineers ("USACE") Draft EIS (all of which utilize dredged sand for the Town's portion of the Project), and instead request the USACE perform a detailed, thorough analysis of the use of upland, mined sand from the Stewart Mine (used by the county) and the Ortona Mine (proposed by The Coalition to Save Our Shoreline, Inc.).	See response to Comment #65.
495	SOS	Bukk Carelton	February 2, 2015 email from Eubanks to USACE: Attached please find copies of pictures which were taken at MidTown Beach today showing that the problems which are occurring as the result of the use of dredged materials. Please note the poor quality of fill and the high rock content of such fill. My client does not want the same conditions to occur at Reach 8 if the Town is allowed to use dredged sand for its portion of the above Project.	

496	SOS	Bukk Carelton	February 24, 2015 email from Eubanks to USACE (1/4): As you know our office represents Bukk Carleton. Below please find an e-mail provided to the Town Manager of the Town of Palm Beach ("Town") regarding the continued inaccurate statements being made by the Town Staff in connection with the above referenced Project, along with the e-mails from Daniel Bates, the Deputy Director of the Palm Beach County Department of Environmental Resources Management, debunking the assertions made by the Town Staff. Mr. Carleton would like this information included within the Public Comments to the Draft EIS. Thank you.	
497	SOS	Bukk Carelton	February 24, 2015 email from Eubanks to USACE (2/4): Fwd: Eubanks to Bates: I hate to do it again, but I need to ask for a couple of follow up clarifications. At the Town Council meeting this morning, Mr. Brazil made two comments which (once again) seem contrary to our prior e mails. First, he indicated that the County's Technical Specifications (because they referred to Annual Dune and Wetland Restoration) which included a minimum grain size of 0.30 mm mean grain size were not applicable to the SPB Project. As I recall and as set forth below (was well as within the Draft EIS) it was my understanding that the same Technical Specifications apply to all of the County's projects including the county's portion of the above Project. Can you please clarify if the minimum 0.3 mm mean grain size within the Technical Specifications is applicable to all of the County's project including the SPB portion of the above project? Second, Mr. Brazil indicated that I was wrong to quote the County's contract as $28 per cubic yard to SPB for Stewart mined sand with a mean grain size of 0.33 mm, when it was really $28 per ton not cubic yard, such that when the Town priced Stewart sand (as opposed to piggy backing on the County's contract) the cost was $36 per cubic yard. Can you clarify whether the price is $28 per cubic yard (as indicated in your below e-mails) to SPB or whether it was actually $28 per ton.	
498	SOS	Bukk Carelton	February 24, 2015 email from Eubanks to USACE (3/4): Fwd: Bates to Eubanks: We use the same mined sand specifications for all of the beaches we manage throughout the county. The contract uses tonnage because truck weight tickets are the easiest way to keep track of the sand delivered. We converted that to cubic yards in order to answer the questions using the standard measurement of beach fill projects. So yes, $28 per cubic yard is our estimated cost for the SPB project.	

499	SOS	Bukk Carelton	February 24, 2015 email from Eubanks to USACE (4/4): Fwd: Eubanks to Tom Bradford: At Tuesday's Town Council Meeting Mr. Brazil continued to make a series of incorrect statements, which appeared to have been relied upon by the Town Council, including that: (a) Because they are referred to within the Annual Dune and Wetland Restoration Report, the County's Technical Specifications (which require a minimum of 0.3 mm mean grain size for sand for all of its projects) were not applicable to its portion of the above Project. This is simply incorrect. As you are aware, the County's Technical Specifications for sand (from the Annual Dune and Wetland Restoration Project Report) are included within Appendix B to the Draft EIS http://www.saj.usace.army.mil/Missions/Regulatory/ItemsofInterest.aspx This information is further confirmed with the below e-mail string from Mr. Bates, the Deputy Director of Palm Beach County Department of Environmental Resources, in which he responded on January 27, 2105 question "Do the same Technical Specifications set forth in the Annual Dune and Wetlands apply for all County Projects? " Yes. This same response is also contained within Mr. Bates' clarification dated February 10, 2015 below that, "We use the same mined sand specifications for all of the beaches we manage throughout the county." As a result, it is misleading for Mr. Brazil to represent that the Technical Standards somehow do not apply to County's portion of the above Project, or that the Town has adopted the most stringent standards for sand in the area (at 0.25 mm minimum grain size) when the County's standard for all of its projects is in fact higher (at 0.3 mm minimum grain size); (b) More importantly, Mr. Brazil was incorrect when he indicated that the County's contract for Stewart mined sand is really $28 per ton, not cubic yard, such that when the Town priced Stewart sand (as opposed to "piggy backing" on the County's contract) the cost was $36 per cubic yard. Once again, this is demonstrably not the case. Instead, as you will see from Mr. Bates' clarification response below, that while the County's contract is admittedly for sand per ton (which I believe is in the neighborhood of 1.3 tons or 2,560 lbs per cubic yard), in quoting the price of $28 per cubic yard delivered to SPB, the County converted its tonnage calculations back into cubic yards. As a result, the Town could easily "piggy back" on the County's contract at some $8 per cubic yard cheaper than the $36 per cubic yard for Stewart mined sand cited by Mr. Brazil. The failure to do so could cost the Town up to an additional $600,000 (i.e. $8 x 75,000 cubic yards) if the Town places Stewart mined sand above the mean high water within Reach 8. I bring these inaccuracies to your attention because, at the end of the day, Mr. Carleton does not want the Town to be caught making inaccurate statements, much less paying more for sand under a separate contract when it could easily have "piggy backed" onto the County's contract at a lesser cost.	

500	SOS	Bukk Carelton	February 25, 2015 email from Eubanks to USACE: As you know our office represents Bukk Carleton. As you may also know, at its meeting on February 10, 2015, the Town Council of the Town of Palm Beach considered in detail what the Town's "official" public comment to the Draft EIS should be regarding the above referenced Project. There were certain issues raised by the Town's own expert (Penny Cut of Coastal Systems International) as well as issues raised by Karyn Erickson of Erickson Consulting Engineers, Inc ("ECE") (for example, if the USACE is using a model for 0.33 mm mean grain size for the Project while the Town is using dredged materials with a mean grain size of 0.25 mm the results will be inaccurate, the fact that some of the templates do not take into consideration the effect of Hurricane Sandy, and the fact that no sand is being placed at the Atriums despite the fact is has suffered some of the highest erosion in the area). In the end the Council came up with a general consensus as to what its public comments should include. It is my client's understanding that the Town was to include within its official comments certain information provided by Coastal Systems as well Karyn Erickson within its response. At the same time, the Town was to make a request that the USACE perform certain modeling and evaluations using a coarser grain size for the Town's "Preferred Alternative" of the Project from an upland mine source, as well as consider and evaluate as an additional alternative(s) (as further detailed within Karyn Erickson's submissions to you) which included the use of approximately 99,000 cubic yards of larger grain sized sand from an upland mine source. To the extent there is any confusion as to exactly what was or was not said at the Town Council meeting, I have attached the below link to the Town Council's meeting which my client would request (along with this e mail) become a part of the public comments on the Draft EIS. The Town's discussion of the Draft EIS begins at 1:42:32.	See response to Comments #10 and 49.
501	SOS	Bukk Carelton	February 19, 2015 letter from Carelton to USACE (1/4): A recent election for certain council members for the Town of Palm Beach has now been completed. It was well publicized and one of the major issues was shore protection. Due to the extensive public coverage, both in the media and by mail, on the the beach situation, it is apparaent that Palm Beach citizens (and particulary those in Reach 8) are aware of the following: (1) Due to the ravages of Hurricane Sandy, Reach 8 presently has no hurricane protection; (2) The so-called "15 year storm protection" is no protection from hurricanes; (3) Hurricane protection is represented by a 25 year (or higher) storm protection; (4) It appears that Reach 8 is close to being the only section of Palm Beach which does not currently have hurricane protection; (5) The residents of Reach 8 are unwilling to accept a plan that does not protect them from hurricanes.	
502	SOS	Bukk Carelton	February 19, 2015 letter from Carelton to USACE (2/4): Given the above, it is certain that any plan approved by the Corp of Engineers that does not provide for hurricane protection (25 year storm protection or better) will result in litigation. This will be expensive and will only forestall the implementation of a hurricane protection plan so desperately needed in Reach 8. At the present time, a hurricane on Palm Beach is statistically three years overdue. Accordingly, I would strongly urge the Corp to concentrate its energies on those plans that provide for hurricane protection.	See response to Comment #1.

503	SOS	Bukk Carelton	February 19, 2015 letter from Carelton to USACE (3/4): Although I'm not an engineer, information being promulgated during the elections revealed that a plan which proposes placing mined sand on the beaches of the same size currently existing on those beaches could be much more effective - both from a physical point-of-view and from an economic point-of-view. Less sand will be needed which will reduce costs and the the compatible sand size will remain on the beaches for an extended period of time over undersized grains of dredged sand and silt. In addition, the less sand, -the more environmentalists' concerns with environmental impacts of hard bottom mitigation will be satisfied.	See response to Comments #9, 49 and 144.
504	SOS	Bukk Carelton	February 19, 2015 letter from Carelton to USACE (4/4): Finally, it is my understanding that the plans submitted by SOS and particularly the four year plan which I believe now the Town Council of Palm Beach is ready to submit to you as part of their overall desired plan, has never reached the eyes of your staff without serious changes. For example, the original plan called for mined sand and, as I understand it, the plan which the Corp is analyzing calls for using dredged sand. Obviously, this increases the amount of sand necessary which, in turn, increases costs as well environmentalists concerns as to mitigation. I also understand the original plan had included groins. If the Corp needs more time to study groins, it would be appropriate to put that part of the analysis to the side in order to speed up an approval for placement of sand; however, it should still remain part of the Corp's overall long term approval response.	See response to Comments #1, 10, 16, 45, 49, and 54.
505	SOS	Karyn Erickson	February 25, 2015 letter with comments: The principal shortcomings of the DEIS are identified with emphasis placed on the Reach 8 "Town of Palm Beach" segment of the Project area, and include: (1) DEIS Project’s objectives and goals are unclear and vary throughout the document	The Project purpose and need, goals, and objectives were clarified and checked for consistency throughout the DFEIS.
506	SOS	Karyn Erickson	(2) It is unclear in the DEIS whether the beachfill templates are volume based (i.e. a maximum placement of 75,000 CY) or template based. More specifically, are the DEIS beachfill templates for the Reach 8 Project segment, template based such that the volume required to beachfill the template is based upon the current beach condition at the time of construction, which will result in an increase in beachfill volume to account for erosion losses since the November 2011 profiles) or volume based (i.e. the Reach 8 Project segment will place a maximum of 75,000 CY)?	The volume of sand required for each alternative is template-based and varies based on the conditions of the beach at the time of the physical survey conducted. All fill volumes will be updated based on beach profile and hardbottom delineation surveys conducted immediately prior to construction. This is clarified in Section 2.0.
507	SOS	Karyn Erickson	(3) Sand volume losses and impacts from the 2012 storms and hurricanes are ignored and missing (e.g. Hurricane Sandy);	See response to Comment #60. Within the Town's portion of the project, additional modeling was performed (Sub-Appendix G-1, Attachment E). As part of this effort, the existing conditions within the SBEACH model were updated to reflect 2014 beach conditions to evaluate the storm protection afforded without a project under a more eroded condition. Text was revised in section 4.5 of Sub-Appendix G-1 to clarify.

508	SOS	Karyn Erickson	(4) Impacts of different upland and offshore sand sources on future erosion rates and renourishment intervals, compatibility with the native beach and the effect on the overbeachfill factors and performance and hard bottom impacts;	See response to Comment #49.
509	SOS	Karyn Erickson	(5) The quality and costs of offshore sand are not accurately represented, nor are the grain size characteristics modeled or analyzed correctly, including: (a) Analysis of the sand size and quality for upland mined sand (Ortona and Stewart Mines), including the ability to control the quality of the *actual* placed sand and the unit placement costs vs longevity and impacts on hardbottom are completely absent in the "comprehensive" DEIS analysis, (b) The use of offshore sand for the Reach 8 shore stabilization project contradicts the Scoping Meeting statements, whereby the USACE stated that the sand source would be from an upland mine; (c) "Quality Control" for the constructed project is not described or addressed adequately in terms of sediment grain sizes for upland and offshore sand sources. For examples, the present 2015 Mid-Town construction project has seen significant differences in the quality of sand at the discharge pipeline (refer to Attachment 3). (d) The identified offshore sand sources was neither consistently or accurately modeled using the DELFT 3D model simulations to assess sand movement and sand spreading to the surrounding nearshore environment as the sand quality is stated as both 0.30 mm and 0.36 mm in the DEIS. For the Town's Reach 8 segment which proposes using an "offshore" sand with specifications which are described in the Palm Beach Island Beach Management Agreement as requiring a 0.25 mm mean grain size, the model's calibration assumptions are incorrect and inaccurate the results of the simulations are invalid for the 6 Alternatives modeled.	See response to Comments #9, 49 and 144.
510	SOS	Karyn Erickson	(6) Calculation of storm protection of the upland property and the model simulations to assess impacts are inaccurate and unreliable as the beach profile conditions were based on the November 2011 (Reach 8), Pre- Hurricane Sandy beach profile conditions prior to the loss of approximately 61,000 cubic yards of sediment within the dune and foreshore beach area;	See response to Comment #60.
511	SOS	Karyn Erickson	(7) Hardbottom Impact calculations appear to be based on hardbottom conditions which were based on exposure in years (2006 and 2013) immediately following the uncovering of hard bottom and highly erosive impacts of significant hurricanes, including the 2004-2005 Hurricanes Francis and Jean and the 2012 Hurricane Sandy, while the DEIS does not explain the time averaged areas of hardbottom for the years listed in the tables (See Attachment);	See response to Comments #62 and 197.
512	SOS	Karyn Erickson	(8) The Equilibrium Toe of Beachfill ("ETOF") methodology followed in the DEIS does not conform to the established and accepted methods approved by the Florida Department of Environmental Protection (FDEP) or conform to these a profile translation or equilibrium profile methods, nor are the DEIS calculations, assumptions and figures provided to support the method proposed.	The ETOF uses a profile translation methodology.

513	SOS	Karyn Erickson	(9) The evaluation of the SOS Reach 8 Project design was neither accurately modeled or analyzed which included a 6 year and a 4 year renourishment interval Project design that would place 99,000 CY (4 year renourishment) of high quality sand that is similar to the native beach size of 0.38 mm or 0.58 mm (Ortona);	See response to Comments #10, 49, and 54.
514	SOS	Karyn Erickson	(10) The SOS Reach 8 Beach Stabilization Plan is consistent with the County's "Preferred Plan" Project area calling for use of upland high quality mined sand, placement volumes at 15-17 CY/Ft and placement of groins to slow erosion rates and reduce impacts on adjacent hardbottom areas (as shown qualitatively in the model simulations). Further to this point, the DELFT 3D model simulations consider sand size that appears to be similar to the sand proposed by Palm Beach County.	See response to Comment #49.
515	SOS	Karyn Erickson	Design Goals and Criteria: The DEIS does not clearly state the design goals and objectives, and whether or not these objectives and design goals are achieved or maximized for each of the alternatives evaluated. For beach nourishment and shoreline stabilization projects, the project goals must include the design storm level protection.	See response to Comment #1.
516	SOS	Karyn Erickson	Beachfill Profile Templates, Sand Volumes and the Impacts of Hurricane Sandy: Hurricane Sandy impacted the Town of Palm Beach shoreline in October 2012. The DEIS evaluates the Project alternatives and costs based upon outdated Pre-Storm (November 2011) profile data although the December 2012 Post-Storm profiles were available and the severe erosion that occurred at Reach 8 was well known (e.g. FEMA funding was requested for Reach 8). Accordingly, the beachfill volume required to achieve the constructed profiles modeled is grossly underestimated. Furthermore, the DEIS does not specify if the Project templates evaluated are volume based (i.e. a maximum of 150,000 CY will be placed at the time of construction) or template based (i.e. the Project may place a beachfill volume in excess of 150,000 CY to account for and remedy additional erosion losses occurring after the Reach 8 base beachfill design profiles were surveyed (Nov 2011). How will the impacts of the Hurricane Sandy sand losses on the Project be evaluated and will new modeling to demonstrate the required 25 year protection for upland buildings and infrastructure? The DEIS states that *"Based on the SBEACH simulations and background erosion, the status quo dune nourishments alone [11 cy/ft from R-129 to R-133] are not sufficient to sustain the existing conditions." (Sub Appendix G-1, Page 30).* With the exception of the beach profile at R-130, the beachfill densities for Town's Preferred Alternative 2 are less than 11 cy/ft which is inconsistent and in conflict with the Project's goals and objectives.	See response to Comments #60 and 506.

517	SOS	Karyn Erickson	Sand Quality, Performance, Costs and Environmental Impacts: The DEIS states that the Town of Palm Beach proposes to use sand dredged from offshore borrow areas, temporarily staged on the beach during construction of the Mid-Town of Phipps Reach 7 Nourishment Projects and truck hauled to Reach 8, as the source of sand to nourish Reach 8. Palm Beach County proposes to use an upland sand source to nourish the County's beaches. In general, the *DEIS fails to discuss the impact of sand quality (e.g. grain size) on project performance , hardbottom impacts, costs, etc* . Considering sand quality is a key engineering consideration in the design of shore stabilization projects, the analysis and explanation of this critical design factor is missing from the DEIS which is an essential design consideration for the federal agencies to review and recommend approval of a beach nourishment project. The DEIS assumes a mean grain size of 0.30mm for the evaluation of all beach and dune fill all alternatives. The mean grain size among the sources of sand proposed are NOT the same among the alternatives. While the Town proposes to utilize an offshore source with a mean grain size of 0.25mm to 0.28mm, the County proposes to utilize an upland source with a mean grain size of 0.33mm (Stewart Mine, Dan Bates, Personal Communication) and the SOS alternative recommended use of the Ortona (or aragonite) sand with a mean grain size of the Ortona sand of 0.57mm.	See response to Comments #9, 16, 49, 144.
			con't from above: By placing a coarser grain size in the model than available in the offshore borrow areas, the level of protection, project life, environmental impacts (i.e. hardbottom coverage), costs, etc are misrepresented for the alternative projects for the Town. Similarly, by using a finer grain size in the model than suggested by the SOS Alternative, the performance is underestimated and project costs and environmental impacts are overestimated. The advantages of using an upland sand source with coarse sand include: (a) Upland sand provides a dependable/consistent source with minor variability in sediment size. In contrast, the Town's offshore borrow sites are characterized by sediment with mean grain sizes that vary substantially, between 0.15mm and 0.36 mm. (b) The Town's proposed offshore borrow sites are associated with high overfill ratios, representing poor compatibility with the native beach sand which is expected to result in unstable/fine sediments eroding from the beach profile and moving to offshore areas where the finer grain sizes cover and adversely impact offshore hardbottom. The Finding of Judge Meal in his 2009 permit denial for the Reach 8 Project shoreline (See Attachment D) focused on the same errors and sediment quality issues in the 2008 Reach 8 project's proposed offshore sand source. Offshore sand dredged and stockpiled during the construction of the Mid-Town project is sited as a potential source of sand for the Town's project. Recent independent testing of the placed sediment found significant variation and high fine content in the slurry from the dredged sediment (refer to Attachment C). The DEIS Table 2-3 states that the total project costs for the Town and County's Preferred Alternatives are $750,000 and $3.45M, respectively. A detailed comparison of costs and quality by source with references to the recently completed Projects in Palm Beach is provided in Attachment E. The Town often cites cost as a reason for selecting an offshore borrow source as compared to a high, quality upland sand source. However, their cost analysis has been largely incomplete as seen in the DEIS Table 2-3, as these costs do not take into account the key cost factors which contribute to the total cost of offshore sand. Offshore sand includes not only the construction/dredge costs but also the cost of expensive offshore sand searches, borrow area designs and additional permitting expense. Additionally, the sand volumes required to compensate for the incompatibility of the finer sand and the high "overfill" ratios or diminished performance and high erosion rates without additional sand placement are not considered. As shown in Table 1 below (see document), the unit costs for offshore sand are significantly higher than given in the DEIS and described with references in Attachment E.	

518	SOS	Karyn Erickson	Hardbottom Areas and Calculation of Impacts: The DEIS assumes the use of a significantly coarser grain size in the model than available in the offshore borrow areas results in an underestimation of environmental impacts, both permanent and temporary, resulting from the Town's Preferred Alternative. We request that a sensitivity analysis on the mean grain size of sand is conducted to determine the effects of sand quality on environmental impacts. Furthermore, the methodology used to calculate the hardbottom impacts clarifications regarding (1) how the ephemeral hardbottom areas were time-averaged and (2) how the analytical ETOF and Delft3D methods of developing equilibrium profiles and hardbottom impacts compare.	See response to Comments #49, 197 and 200.
519	SOS	Karyn Erickson	Hardbottom Impacts, Graphic Illustration Depicting the ETOF and Profile Translation: The DEIS indicates that both the Delft3D and analytical Profile Translation method were used to predict the ETOF; however, calculations, figures, assumptions and the resulting comparison of these two methods are not provided in the DEIS. Predictions of the two methods should be compared, and justification for selection of method selected as the basis for mitigation must be provided. In short, there is insufficient and unclear information within the DEIS to perform an accurate assessment of hardbottom impacts for the Project areas and thereby the estimates of mitigation based on such calculations are unreliable.	See response to Comments #84 and 266.
520	SOS	Karyn Erickson	Evaluation of Increased Sand Volume Alternatives (Alternatives 5-6 and SOS Alternative): The Town has repeatedly stated that the purpose of the Shorefront Management Plan is to provide shoreline protection from a severe storm (i.e. 25yr return period event) which is the SOS Plan. A restored dune provides this level of storm protection. The beach berm fronting the dune preserves the dune between sand placement intervals (e.g. 4 years) by providing advance beachfill and is consistent with the recommended template for beachfill by the Woods Hole Group recommendations to the Town of Palm Beach (2013). The key components of the SOS's recommended Shoreline Stabilization Project Plan are (1) high quality sand from an upland source and (2) provides shoreline protection from a 25yr return period storm within a protective dune and advance beachfill (Attachment 1). While the DEIS develops Alternatives 5 (Town Increased Sand Volumes) and 6 (Town and County Increased Sand Volumes) with a beachfill volume consistent with the SOS 4Yr Nourishment Plan, the source of sand for Alternatives 5 and 6 is identified as coming from an offshore sand source evaluated with a 0.30mm mean grain size. This is a significant error and discrepancy and, as such, the SOS recommendations are not given full consideration by the EIS. On April 29, 2014, the Town sent a letter to the USACE to "formally request that the USACE give equal consideration to 25-year storm protection to the upland properties of the project shoreline of Reach 8..... which described the Town's desire and intent for USACE to maximize the opportunity for storm protection in Reach 8". However, the DEIS states that the overall project purpose, as defined by the USACE, is to achieve shoreline stabilization to an extent that upland infrastructure is protected from storm levels with a 15-year interval of recurrence. In accordance with the Town's request to give equal consideration for 25-year storm protection to upland properties, Alternatives 5 and 6 should be model and analyze the Project design for coarser, upland sand. Further, we suggest a sensitivity analysis on the mean grain size of sand, in 0.05mm increments for sand ranging between 0.25 and 0.55mm representing the range of potential sources.	See response to Comments #1, 10, 49, and 54.

521	SOS	Karyn Erickson	SOS Shoreline Stabilization Plan is Consistent with the County's Preferred Plan: The SOS Shoreline Stabilization Plan is consistent with the County's Preferred Alternative by (1) requiring a sediment source that is compatible with this beach, (2) including low profile king pile type groins (2) for sand stabilization, and (3) providing comparable beachfill densities (average 17 CY/Ft). Please justify and provide technical information and graphics as to the effect of 2 low profile groins on reducing background erosion losses at Reach 8 and changes to hardbottom impacts for the Town's portion of the project consistent with the County project. In addition, as described herein, evaluate the compatibility of the proposed offshore to the Ortona and Stewart mine upland sand sources for the Town's segment of the Project.	The effects of the groins are discussed in the results analysis in Sub-Appendix G-3. See response to Comments #49 and #54.
522	SOS	Karyn Erickson	CONCLUSION: *"In compliance with the National Environmental Policy Act (NEPA), this Draft EIS will support decision making on the existing permit applications and will inform agencies, stakeholders, and the public of the impacts of, and alternatives to, the Applicants' two similar permit applications for beach stabilization projects." (Executive Summary, Page xxvii):* The Final EIS must define the project purpose and design criteria and thoroughly evaluate how each alternative meets the specified criteria. Considering sand quality is a key engineering consideration in the design of beach restoration projects, the absence of any analysis and discussion of this critical design factor the DEIS is concerning considering the EIS is the principal decision document for the Federal Agencies. By simulating a coarser grain size in the models than available in the offshore borrow areas, the level of protection and project life are overestimated in the DEIS for the Town's project. The compatibility of the sand, and therefore project performance, increases with the mean grain size as it approaches the native mean grain size of 0.43mm. The quality of sand and its impact on project life (i.e. nourishment interval) and environmental impacts requires additional evaluation and sensitivity analysis. Further, we request that the Town's Increased Sand Alternatives (Alternatives 5 and 6) be re-evaluated using an upland sand source to be consistent with the County's Preferred Alternative and the SOS Plan.	See response to Comment #49.
523	SOS	Karyn Erickson	**For all Attachments see document for statements referenced herein:** Attachment A: ECE Comments 1-6: In general, the DEIS does not clearly state the design goals and criteria, and in fact provides contradictory statements with regards to the Project purpose, goals and objectives. In addition to specifying the Project life (i.e. nourishment interval), the Project purpose must clearly define and specify the level storm protection (i.e. 15 yr or 25yr return period storm event) afforded to upland property and infrastructure. Furthermore, a target renourishment interval of three years is specified to provide "long-term" storm protection; however, the DEIS goes on to state that the authorization requested is for a single nourishment event only. Please clarify this discrepancy.	See response to Comment #1 and 73.
524	SOS	Karyn Erickson	Attachment A: ECE Comments 7: The level of storm protection afforded by a Project is typically defined by the return period of the storm event that causes damage to upland property and infrastructure. The potential for damage to upland property due to a storm must take into account the anticipated storm erosion profile, soil stability (i.e. post-storm dune slope), and background erosion rates. For the Project to provide the specified design level of storm protection, the eroded beach-dune condition at the end of the re-nourishment interval (i.e. year 3) must be sufficient to provide said level of protection.	See response to Comment #86.

525	SOS	Karyn Erickson	Attachment A: ECE Comment 8: The DEIS does not specify if the Project templates evaluated are volume based (i.e. a maximum of 150,000 CY will be placed regardless of the beach-dune condition at the time of construction) or template based (i.e. the Project may require a fill volume in excess of 150,000 CY to account for erosion occurring since the design profile was taken). Furthermore, the main text specifies a fill volume of 150,000 CY (75,000 CY Town; 75,000 CY County) while the modeling appendix assumes a fill volume of 117,300 CY (53,000 CY Town; 63,500 CY County). There appears to be no explanation for the discrepancy in the volumes reported.	See response to Comment #506.
526	SOS	Karyn Erickson	Attachment B: ECE Comment 9: The DEIS does not specify if the Project templates evaluated are volume based (i.e. a maximum of 150,000 CY will be placed regardless of the beach-dune condition at the time of construction) or template based (i.e. the Project may require a beachfill volume in excess of 150,000 CY to account for erosion occurring after the November 2011 profile used for design and modeling simulations). Furthermore, the main text specifies a beachfill volume of 150,000 CY (75,000 CY Town; 75,000 CY County) while the modeling appendix assumes a beachfill volume of 117,300 CY (53,000 CY Town; 63,500 CY County). There appears to be no explanation for the discrepancy in the volumes reported.	See response to Comment #506.
527	SOS	Karyn Erickson	Attachment B: ECE Finding 10: As described previously, the DEIS does not specify if the Project templates evaluated are volume based (i.e. a maximum of 150,000 CY will be placed regardless of the beachdune condition at the time of construction) or template based (i.e. the Project may require a beachfill volume in excess of 150,000 CY to account for erosion occurring since the design profile was taken). Furthermore, the main text specifies a beachfill volume of 150,000 CY (75,000 CY Town; 75,000 CY County) while the modeling appendix (Table 5-1, Sub Appendix G-3) assumes a beachfill volume of 117,300 CY (53,000 CY Town; 63,500 CY County). There appears to be no explanation for the discrepancy in the volumes reported. Furthermore, Hurricane Sandy in October 2012 resulted in significant losses of sand in the upper beach and dune which, if the projects are template based, will require a significant increase in volume. Volume losses above the -13 ft depth contour, according to the Town's annual beach monitoring report, exceeded 180,000 CY. ECE calculated a loss of 61,000 CY in the upper beach and dune portions of the beach profiles as provided herein.	See response to Comments #60 and 506.
528	SOS	Karyn Erickson	Attachment B: ECE Finding 11: With the exception of R-130, the beachfill densities for Town's preferred project are less than 11 cy/ft.	
529	SOS	Karyn Erickson	Attachment B: ECE Comment 12: This statement is irrelevant given the beach profile data used as the basis for the Project design. Why report 2013 beach profile volumes in this section with no mention of the losses due to Hurricane Sandy which were published by the Town in April 2013 (ATM, 2013)? Furthermore, reporting only the volume changes to -26.2 ft NAVD (depth of closure) does not reflect what occurred above the -13 ft depths (NAVD) within the Project's beachfill templates and the increasing vulnerability of upland property to storm damage that has resulted from those erosion losses.	See response to Comment #60.
530	SOS	Karyn Erickson	Attachment C: ECE Comment 13: The source of sand for the Town's portion of the project was changed from compatible sand derived from an upland source to incompatible sand to be dredged from an offshore source without any further notice to the public until publication of the DEIS more than 1 year later. Considering sand quality is a key engineering consideration in the design of beach restoration projects, and the legal challenges that have occurred within the Town of Palm Beach due to sand quality and source in the past, failure to notice this significant is concerning.	

531	SOS	Karyn Erickson	Attachment C: ECE Comment 14: Agreed. However, this statement contradicts the manner in which the DEIS evaluated the various alternatives. The DEIS considered sand offshore sand with a mean grain size of 0.25mm to be the same to be the same as 0.30mm (SBEACH) and 0.36mm (Delft3D). Compatibility with the native beach (0.43mm) and the resulting impacts of project performance and environmental impacts were not considered for the offshore sand versus the coarser, upland sand. In 2009, the Administrative Law Judge found that "the existing mean grain size on Reach 8 is at least 0.38 mm, not 0.30 mm." (ALJ Findings, Page 221). A large fraction of the offshore sand contains fine sand as seen at the recent construction at Mid-Town where independent samples of discharged sediment and discharged sediment mixed with existing beach sand show very fine fractions of sand (refer to the Ardaman Test Reports in Attachment C).	See response to Comment #49.
532	SOS	Karyn Erickson	Attachment C: ECE Comment 15: We disagree that the use of offshore sand source (0.25mm) minimizes environmental impacts. In fact, poor sand quality and incompatibility directly reduce project performance and increase impacts. The DEIS itself states that due to larger mean grain size and smaller fines content, upland sand is expected to be more stable and produce less turbidity in the nearshore environment than sand obtained from offshore borrow areas (Page 2-28).	
533	SOS	Karyn Erickson	Attachment C: ECE Comment 16: The compatibility of the sand, and therefore project performance, increases with the mean grain size as it approaches the native mean grain size of 0.43mm. The Town's Preferred Alternative specifies the use offshore sand with a mean grain size of 0.25mm for the Town's portion of the Project; however, the project alternatives are evaluated by assuming a mean grain size of the sand source as 0.30mm (SBEACH) and 0.36mm (Delft3D). By using a coarser grain size in the models than available in the offshore borrow areas, the level of protection and project life are overestimated. As described throughout this document, the quality of sand and its impact on project life (i.e. nourishment interval) requires additional evaluation and sensitivity analysis.	See response to Comments #16 and 49.
534	SOS	Karyn Erickson	Attachment C: ECE Comment 17: Predicted performance of a beach nourishment project is highly dependent on the background erosion rates including expectations of normal seasonal storm waves and sand compatibility of the sand placed to that of the native beach. As such, the accurate representation of the native beach characteristics for stability of the beach is critical to program success. In 2009, ECE independently assessed the native mean grain size and found it to be 0.43mm for the Town's Reach 8 beaches. We found that the Town was underestimating the native mean grain size by allowing the fine offshore sand placed along the Town's shoreline in 2009 to re-set the native grain size which is not representative of the true native beach or indicative of beach stability. Of significance is that an Administrative Law Judge stated in 2009 that "re-defining the native beach sand based on newly placed finer sand is not appropriate" in his decision on the FDEP proposed permit for Reach 8. The DEIS itself publishes data to support a native mean grain size of 0.43mm (Page 3-22, Table 3-5). As such, a native mean grain size of 0.43mm should be used for calibration and execution of the models and estimates of project performance.	See response to Comments #9 and 49.

535	SOS	Karyn Erickson	Attachment C: ECE Comment 18: The DEIS assumes a mean grain size of 0.30mm for the evaluation of all beach and dune fill all alternatives. The mean grain size among the sources of sand proposed are NOT the same among the alternatives. While the Town proposes to utilize an offshore source with a mean grain size of 0.25mm to 0.28mm, the County proposes to utilize an upland source with a mean grain size of 0.33mm (Stewart Mine, Dan Bates, Personal Communication) and the SOS alternative recommended use of the Ortona (or aragonite) sand with a mean grain size of the Ortona sand of 0.57mm. By using a coarser grain size in the model than available in the offshore borrow areas, the level of protection, project life, environmental impacts (i.e. hardbottom coverage), costs, etc are misrepresented for the alternative projects for the Town. Similarly, by using a finer grain size in the model than suggested by the SOS Alternative, the performance is underestimated and project costs and environmental impacts are overestimated. As described throughout this document, the compatibility of the sand, and therefore project performance, increases with the mean grain size as it approaches the native mean grain size of 0.43mm. The quality of sand and its impact on the project alternatives requires additional evaluation and sensitivity analysis.	See response to Comments #9, 16 and 49.
536	SOS	Karyn Erickson	Attachment C: ECE Comment 19: See comparison of costs and quality by source in Attachment E.	
537	SOS	Karyn Erickson	Attachment C: Letter from Ardaman & Associates to ECE: As requested, our firm has performed laboratory testing of two soil samples, which were delivered to our office on February 10, 2015. We understand that the samples were obtained by Erickson on January 28 to 29, 2015. This report presents the test results, which are considered representative of the samples, as received. As requested, the laboratory testing program included performing granularmetric analysis by sieves and determining the Munsell color. The test results are shown on the attached Plates 1 and 2. The sample descriptions shown on the Plates are based on the test results and a visual classification procedure in general accordance with the Unified Soil Classification System (ASTM 02488).	
538	SOS	Karyn Erickson	Attachment D: Reach 8 Administrative Law Judge 2009 Findings and Denial.	
539	SOS	Karyn Erickson	Attachment D: February 9, 2015 letter from John Eubanks to Mayor Gail Coniglio and the Town Council.	See response to Comment #466.
540	SOS	Karyn Erickson	Attachment E: Sand Costs (Offshore and Mines): The purpose of this summary report is to provide a top level comparison of sand costs and quality by sand source for consideration in planning the Reach 8 Shoreline Stabilization Project. Three sand sources were evaluated including: (1) Ortona Mine (SOS Plan, or similar high quality mined sand) (2) Stewart Mine (Palm Beach County's Source for Jupiter-Carlin Beach Nourishment, 2013/14) (3) Borrow Area 3 Offshore Sand Source (Town's Preferred Source). ***See report for details.**	

541	SOS	Karyn Erickson	Attachment F: ECE Comment 20: Hurricane Sandy impacted the Town of Palm Beach's shoreline in October 2012. The DEIS evaluates the Town's project alternatives and costs based upon outdated Pre-Storm November 2011 data although the December 2012 Post-Storm profiles were available. As such, the fill volume required to achieve the constructed profiles modeled is substantially underestimated. According to the Town's 2012 Physical Monitoring Report, approximately 48,000 CY and 186,800 CY was lost above MHW and between MHW and -13.1 ft NAVD, respectively, between August 2012 (pre-Sandy) and December 2012 (post Sandy) (ATM, 2013). The statement "no major hurricanes have made a direct impact to the Project Area since the nourishments" implies that the sand loss impacts of Hurricane Sandy in October 2012 losses are minor. Background volumetric erosion rate is estimated at -4 CY/FY/YR (ECE, 2012). The dune losses evident in comparing the Pre- and Post-Sandy beach profiles are predominantly related to storm impacts, not background erosion as the DEIS states. ECE estimated dune losses on the order of 61,000 CY (or average of -9+ cy/ft) for the Town's Reach 8 by comparing the Nov 2011 and Dec 2012 surveys between R-129 and R-134 (see attached profiles and volume tables). As such, to provide an equivalent level of protection as described by the alternatives evaluated in the DEIS, an additional 61,000+ CY of fill will be required (70% increase). The DEIS graphics and tables for the Town's Preferred Alternative 2 proposes no sand placement at Profile R-133 in the vicinity of the Atriums Condominium (R-133). Pre- and Post Sandy Beach Profiles are compared at R-133 (Figure 1) along with photo documentation (Figure 2) of the severe erosion experienced as a result of this storm.	See response to Comment #60.
542	SOS	Karyn Erickson	Attachment F: ECE Comment 21-22: Sandy impacted the "pre-construction" (i.e. November 2011) profile quite significantly.	See response to Comment #60.
543	SOS	Karyn Erickson	Attachment G: ECE Comment 23-24: The impacts to hardbottom resulting from the SOS Plan (4-yr or 6yr nourishment interval) did not take into account the superior high quality sand proposed and compared with the fine, offshore sand (0.25mm) proposed for the Town's Preferred Alternative. As described elsewhere, the Delft3D model assumed a mean grain size of 0.36mm (Table 4-3, Appendix G of the DEIS). This grain size is much coarser than the 0.25 mm sand that is proposed for use by the Town from an offshore source. As such, the use of a coarser grain size in the model than that which is available in the offshore borrow sites (0.25-0.28 mm) results in an underestimation of the environmental impacts, both permanent and temporary, resulting from the Town's Preferred Alternative. A sensitivity analysis on the mean grain size of sand, in 0.05mm or 0.10mm increments for sand ranging between 0.25 and 0.55mm is highly recommended and typically performed for beach nourishment projects to determine the impacts of sand quality on cross shore sand movement and thus the resulting hardbottom coverage and environmental impacts.	See response to Comments #9, 10 and 49.
544	SOS	Karyn Erickson	Attachment G: ECE Comment 25-27: The use of the Delft3D model as the basis for calculation of hardbottom impacts by alternative is described. However, in Appendix G (Draft Engineering Analysis and numerical Modeling Study), reference to the use of the Profile Translation Method to estimate the Equilibrium Toe of Fill is made. The concluding remarks seem to imply that both the Profile Translation and Delft3D models were used to estimate the ETOF and calculate hardbottom impacts, yet the equilibrium profiles resulting from each method are not presented. Provide the graphics, figures and assumptions with the resulting comparison for the ETOF and the DELFT3D analysis.	See response to Comment #84.

545	SOS	Karyn Erickson	Attachment G: ECE Comment 28: The DEIS states that the area of exposed hardbottom used to calculate hardbottom impacts was determined by time-averaging the exposed hardbottom area between 2003 and 2013. However, the details of the approach to quantify the hardbottom is not presented. Considering that hardbottom impacts are a critical factor in evaluating the project alternatives, and developing the appropriate mitigation, the methodology for time averaging must be fully presented in the DEIS. There is no clear description of the methodology used to estimate this time-averaged area of exposed hardbottom. Furthermore, the DEIS does not specify what percent of the project area contains hardbottom based on aerial delineations between 2003 and 2013 and there is no explanation regarding hardbottom impact calculations for the estimation of temporary and permanent impacts to hardbottom.	See response to Comment #197.
546	SOS	Karyn Erickson	Attachment G: ECE Comment 29: We request that Alternatives 5 and 6 be given the proper consideration by considering the use of coarser, upland sand to be consistent with the County's Preferred Alternative and the SOS Plan.	See response to Comments #10, 16, 49, and 54.
547	SOS	Karyn Erickson	Attachment H: ECE Comment 30: The SOS recommendations are not given full consideration by the EIS. The SOS alternative (described in the EIS as Alternative 7) is not evaluated or represented as stated in the EIS document and its appendices. The SOS Preferred Project Alternative and the analysis clearly states that coarse sand such as Ortona Sand (0.57 mm approx.) or similar to be compatible with the native beach sand (0.43 mm) is required. In contrast, Alternative 5 assumes the sand from an offshore site with a 0.30 mm grain size in the EIS documents. This is a significant error and discrepancy. SOS's key recommendations require the evaluation of alternative(s) which (1) utilize a high quality, compatible sand from an upland source and (2) provides shoreline protection from a 25yr return period storm plus advance fill (Attachment 1). While the Draft EIS develops Alternatives 5 (Town Increased Sand Volumes) and 6 (Town and County Increased Sand Volumes) with a fill volume consistent with the SOS 4Yr Nourishment Plan, the source of sand for Alternatives 5 and 6 is identified as coming from an offshore sand source evaluated with a 0.30mm mean grain size. We request that Alternatives 5 and 6 be given the proper consideration by considering the use of coarser, upland sand. A sensitivity analysis on the mean grain size of sand representing the range of potential sources should be conducted. The Town has repeatedly stated that the purpose of the Shorefront Management Plan is to provide shoreline protection from a severe storm (i.e. 25yr return period event) which is the SOS Plan. A restored dune with a modest beach fronting the dune such as provided for the South Palm Beach shoreline provides this level of storm protection. The beach preserves the dune between sand placement intervals (e.g. 4 years) and is consistent with the recommended Template for Beachfill by the Woods Hole Group. The Woods Hole Group recommend a minimum 17 CY/ft (Woods Hole, 2013). The County's preferred alternative includes seven low profile groins at a nominal cost of $100,000 each. Coastal structures were not assessed or modeled for the Town's portion of the Project as recommended by the SOS Plan. Please provide information as to why low profile groins are not considered for the Town's portion of the project consistent with the County project.	See response to Comments #1, 10, 16, 49, and 54.
548	SOS	Karyn Erickson	Attachment H: ECE Comment 31: The fill configuration and unit density for the EIS Alt 6 and the SOS-4yr renourishment interval projects are similar as described in Table 1. As discussed elsewhere in this document, the differences in the quality of sand and the resulting impacts on performance and environmental impacts are not sufficiently evaluated in the Draft EIS. A unit fill density of 16.0 cy/ft of offshore sand (0.25mm) is not the same as a unit fill density of 16.0 cy/ft of upland sand (≥0.33mm). The compatibility of the sand, and therefore project performance, increases with the mean grain size as it approaches the native mean grain size of 0.43mm.	

549	SOS	Karyn Erickson	Attachment H: ECE Comment 32: The Draft EIS treats all project alternatives and all sand sources as the same. They are not the same. The differences in the quality of sand and the resulting impacts on performance and environmental impacts are not sufficiently evaluated in the Draft EIS. The compatibility of the sand, and therefore project performance, increases with the mean grain size as it approaches the native mean grain size of 0.43mm. The quality of sand and its impact on project life (i.e. nourishment interval) requires additional evaluation and sensitivity analysis.	
550	SOS	Karyn Erickson	Attachment H: ECE Comment 33-34: The SOS Plan recommended, and the County's preferred alternative includes, low profile groins for sand stabilization. Please provide information as to why low profile groins are not considered for the Town's portion of the project consistent with the County project and the SOS recommendation. To summarize, Table 2 provides a comparison of the key design parameters for the Town and County "Preferred Plans" and the SOS Plan.	Groins were not requested by the Town; however, the groins associated with the SOS plan (Alterative 7b in the EIS) were analyzed and discussed in the EIS. See response to Comment #48.
551	SOS	Karyn Erickson	Attachment H: Beach Nourishment Plan and Desing for Reach 8 The Coalition to Save Our Shoreline, Inc. (SOS) Design Basis July 17, 2002	

SUB-APPENDIX K-4

DEIS PUBLIC MEETING ORAL AND WRITTEN COMMENTS

This page intentionally left blank.

PUBLIC MEETING

FOR THE SOUTHERN PALM BEACH ISLAND COMPREHENSIVE SHORELINE STABILIZATION PROJECT ENVIRONMENTAL IMPACT STATEMENT

January 7, 2015

5:30 p.m to 7:13 p.m.

Town of Palm Beach Council Chambers

PRESENTED BY:

Garett Lips, US Army Corps of Engineers

MR. LIPS: All right, everybody, we're going to get started tonight.

We're here for the public meeting. This is a forum for you all to be able to express your concerns or issues, any kind of statements for the draft of the Environmental Impact Statement we just released. We made it available December 12th.

My name is Garret Lips. I'm the project manager with the Army Corps of Engineers. Just introductions, we have Susan Kaynor who is the chief of the Palm Beach Gardens office right here. We have some other people who have helped in developing the EIS. Tom Pierro -- you guys want to stand up just so you know -- everybody knows who to ask if you have problems or questions -- Stacey, Lauren, Brad. So if you have questions about the project once we get through all the -- through the presentation you can ask these people.

Why we're here is so you, the public, stakeholders, can express concerns and be involved in our federal process which is this Environmental Impact Statement. We do have a court reporter right here. She's going to be

recording everything that's made orally, including my presentation. Once we get through all the -- oral comments they'll be a time, if you're not comfortable giving oral comments, she'll be available and you can speak to her directly, or you can make written comments. Anywhere in the back there's paper and pens available. We encourage you to make your comments orally, written or through the court reporter. Please be sure to sign in if you haven't already. We're keeping a tally of the attendance. If you want to make oral comments make sure you made it noted on the sign-in sheet. The time limit is going to be three minutes as it is currently posed.

This is just a basic outline of the presentation. It's going to be quick, 10 or 15 minutes. There's just six components, basically. I am going to go through each one of these real briefly.

All right. Basically we're here because of NEPA. NEPA is the National Environmental Policy Act which requires government agencies, federal government agencies, when they undertake an action you should involve the

public. You should be transparent and you should work with the stakeholders at every chance you get.

So you may ask why is the Corps involved. At this point it's because the projects that the Town and the County, two projects, two separate projects by two separate entities, are being considered under one EIS. And that's -- it's our discretion to do that. It allows streamlining and to expedite, you know, instead of doing two separate EIS's. But, anyway, their projects have proposed structures, filling and dredging within tidal waters and that's why the Corps of Engineers is involved. And for these structures, fill and dredging, they actually need a permit and that's our role.

NEPA is the reason we're here. This is a quick rundown of the different types of NEPA classes of action. Typically Environmental Impact Statements are for the very large projects that have potentially significant effects on the human environment. Most of the projects that we review in the Palm Beach Gardens Permits Office are environmental

assessments. It's really tied to the magnitude of impact, or potential magnitude of impact.

You may ask yourself why we have to do Environmental Impact Statements. The Corps of Engineers is responsible for determining the level of significance. So a couple of years ago we received these applications and we made that significance determination and said, yes, in fact, Environmental Impact Statement would be the appropriate cause of action because of the changes in the shoreline and based on conditions of the shoreline.

Just so you know, the EIS is really a tool for our decision making it's -- it's there as the foundation -- it's supposed to be an analytical and scientific basis for our decision which comes eventually after the EIS process is completed.

So this is just a check back on our little agenda. This is -- we're going to get into the EIS process right now, and the steps that are involved in that.

So just so you know, the Corps of Engineers is the lead federal agency. We weren't notified by any other federal agency

that they wanted to be a cooperating agency with us. We didn't invite any either, and that's more of a federal process if, like, they would be part of the project and they would be potentially adopting our EIS if it was necessary. But at this point we're not considering any cooperating agencies.

If you remember, for those of you who were here last -- for the scoping meeting, it was in August of 2013, if you want to look at the yellow box up on the top, and where we are now is the yellow box there on the right (Indicating).

So here's a Notice of Availability that we published in the Federal Register which triggers the 45-day comment period for the EIS.

We are required to submit the document, make it available to all you stakeholders and all the agencies prior to the Notice of Availability. So if you are on the stakeholder list you probably received notification of that.

January 26th is the end of the common period for the draft Environmental Impact Statement.

Looking forward the final -- based on comments received tonight, based on the amount of additional analytical work we might need to do, based on comments, based on alternatives that may be brought forward tonight, anything like that could change these dates that we have forecast right here. But as -- between scoping, the scoping meeting and tonight, what we did was go through these phases right here (Indicating) where we had to acquire the data, we had to find out what's out there, what environmental resources, culture resources. We did a whole evaluation of everything that was in the project area and then we cataloged it all in the draft Environmental Impact Statement that you all received.

So what's your role as the stakeholders? We are encouraging you to express your views on the DEIS, Draft Environmental Impact Statement, and our current understanding. We wrote it. We're on the record. This is our understanding of what's going to be occurring, what the projects are and the effects and those alternatives and the impacts associated with alternatives. So we want you to provide your

feedback. You can check our data. We're wanting you to do that. You have questions about the way we assess something, let us know. If you are aware of other information that may be useful, please let us know. We're going to continue on with the proposed project. These are just the basic elements of the project just so you have an understanding of what we're talking about.

So this is the overall view (Indicating). There's the two projects. You'll see if you orient yourself to the north, the Lake Worth Pier is right here (Indicating). Lantana, the public beach, is down here (Indicating). The Town of Palm Beach line is right about here (Indicating). So the section on the north between -- just south of Lake Worth Pier down to the County Town line is all beach and dune proposed sand placement. There is some dune. There's some sand in the water. But for the most part it's a long -- which is less than about a 2-mile limit -- and then as you hit the Town of South Palm Beach the County project picks up and they proposed some coastal armoring and some beach and dune restoration as

well.

The one thing you should know is that during the scoping meeting, if you were here, is that the original plan by the Town was to utilize upland mined sand. Since that day we were notified that the Town's preferred source is actually offshore dredge material which would be obtained from a borrowed area north of the inlet, I believe. The method with where they would obtain the fill is they would dredge it from an offshore borrow area, transport it to the beach, somewhere in midtown, stock pile it temporarily and then truck it to Reach 8. That's their proposed -- it's an important thing because originally the plan -- we just want to make sure you're aware that that has changed. But we -- in the draft we also included upland mine as an alternative for fill material. However, the prefer plan by the Town has been changed.

And for the County they still propose upland mine sand because they're not using dredge material.

This is a basic rundown of some of the elements more -- with more detail. And these

are range monuments based on the FDEP monuments on the beach. You'll actually get more detail on the exhibits in the back. But the basic change that you should be aware of is that dredged sand is now preferred for the Town.

This is just a general depiction of, I know it's difficult to see, but that's just the general outline of what -- you can see a little fill template here (Indicating), and then down here there's seven groins, they're very, very small, I'm sorry to have to do that to you but you'll get more detail in the back.

Just a quick cross section of what it would look like. This is at the address near 3120 South Ocean Boulevard. This is a cross section so you're looking from the south north and the dune is over here (Indicating), so there's a modest amount of fill that will be placed in the dune area. As it goes out there's a high tide line about here, so this amount of fill would actually be in the water. It's just slightly different than what the existing profile is. There's more detail in the back.

This cross section (Indicating) actually

we put in here so you can see what coastal armoring structure looks like, what it would look like if it was constructed this way. So these groins made of concrete would be driven into the ground, seven of them, and it's based about 300 feet apart or so and they'd be sticking out roughly about three feet more or less.

MR. VOICE: Level with the berm.

MR. LIPS: Level with the berm. These are -- these are proposed for the County project, and the Town doesn't have any of these proposed.

So we're going to get into the major sections of the EIS. For the Corps of Engineers the purpose and need is a big, very important detail that we -- we base everything on what the goal of the project is, what the desired outcome that the applicant wants. So when we get to purpose and need we do a long detailed evaluation of what the actual purpose is, the need, and what the hope to goal is. From there we -- we come up with alternatives and we always include a no action, what would happen if you left it status quo. But the

alternatives are based on the purpose and need. There's a whole bunch of information in the draft document about all the alternatives that we considered. We considered six of them. And then moving on into the draft document we talk about what's -- what's out here, what's in the project area, all the resources, human resources, culture resources, environmental, aquatic resources, all those things that we have to identify those to make sure we assess those if they're going to be potentially impacted.

So then once we have those resources identified then we go through and figure out what would happen to these resources if the project was constructed or if any alternatives were constructed as well. So we -- so we're always comparing apples to apples when it comes to alternatives and the effects. So we can say if you did this one, this would happen; if you did what the applicant proposed, this would happen, so we can see what's going to occur and make sure that we're on the track of having a project that's not contrary. And in these environmental consequences we look at direct,

indirect and the cumulative. For any endangered species we had to do required consultations, essential fish habitat.

And then the last part is mitigation. How do you offset the potential adverse effects.

Basic understanding of the project purpose, the draft has the Town's and the County's project purposes written out as they prepared them in their permit applications. This is just summarized just so you have an understanding of the basic concept of what they're trying to achieve.

So when we talk about purpose and need and we talk about potential alternatives that would be potentially viable we ask ourselves is it reasonable and would it meet the project purpose. So if it is reasonable, it can built considering the amount of money that's potentially budgeted, it has to be reasonable, then we would consider that as a potentially viable alternative.

In our draft we're going to go through these different alternatives and they're discussed in detail in the draft. There's six of them.

So when we talk about the affected environment these are some examples of what we see when we go out there. We see how the human environment here with the, you know, residences. We got the dune. We have intertidal beach. We have rock line. We have sea turtle nesting habitat. We have near shore hard bottom. We have all those things. That's just to name a few.

This information is tied to the near shore hard bottom that's been mapped over consecutive years. I know it's very hard to see but you can generally see the outline of what the proposed project and these squiggly purple and red and blue lines represent hard bottom lines that were delineated between 2012 and, I think, 2003 or so -- about 12 years -- 10 years of data. So we have all that information and we included it in the EIS.

Environmental consequences, we're looking at direct, indirect and cumulative. The direct effects of where the fill placed in the footprint of the construction, the construction toe, the footprint, that's the direct. When you think about where is that sand going to go

once the tide hits it and gets into the littoral system and starts moving as the natural coastal processes occur, those are the indirect effects.

And we've done some modeling assessment, we have an understanding of where that sand is potentially going to be spread to.

And the cumulative, those are -- which result from the incremental, we have a whole list of, in the draft, of all the potential cumulative effects.

We are including all these effects analysis for each alternative. So we have, what we're aware of are swimming and nesting sea turtles, is a big component of this project, we have loggerhead critical habitat which is a new resource that recently came in that we're going to have to consult for which wasn't identified during scoping because it wasn't part of the Endangered Species Act at that time. That's a new factor we're bringing in to the draft. And we have Acropora. We did a Acropora study. No Acropora, which is a federally listed coral and were not found in the project area.

Other resources, Piping Plover, animals that use -- small birds that utilize the shoreline. West Indian Manatee transit the area. And the Red Dot which is another type of shore bird, another thing that recently became listed under the Endangered Species Act. And we have included that in our evaluation as well. So there has been some changes since scoping.

Moving along in our itinerary we're going to open it up for questions about the EIS process. At this point we want to limit it to that. Just so everybody is clear where we are, where we came from and where we're going. So we're going to have -- the next slide is actually about the future milestone. So if you have questions about the process, if I wasn't clear just, you know, feel free to ask about what's next if you're not clear.

MS. ERICKSON: I have a question. Having been involved in many --

MR. LIPS: Is it possible to use the microphone?

MS. ERICKSON: Having been in -- for the record, my name is Karyn Erickson. I'm a

coastal engineer with Erickson Consulting Engineers. I've served as the engineer of record on a number of projects that involved Environmental Impact Statements and Environmental Assessments through the NEPA process, and also as a consulting engineering firm with the Savannah Corps of Engineers.

Each of these processes we were involved and participated throughout the process all major stakeholder groups whether it was Autobahn, Southern Environmental Law Center or a specific special interest group such as the Save Our Shoreline Coalition. And in this case we have a scoping meeting that occurred one time in August which was about 15 months ago, and since that time rather than be involved in this process through the development and decision making on data sets that drove hundreds of thousands of dollars in numerical modeling with results that we may or may not agree with we're being presented with a draft final EIS without that participation and I find that that's very unusual and I'm disappointed that the public hasn't been involved up to this point.

MR. LIPS: Okay.

MS. ERICKSON: That's my statement.

MR. LIPS: Thank you.

Any other questions or comments?

MR. BONANO: I have a question. I don't think I have to go up to the mike. I have a statement I'd like to make later on. But right now the question. I'm confused -- by the way, my name Charles Bonano. I've been on A1A for the last 30 consecutive years, domiciliary 15 of those years in South Palm Beach and the last 15 years at 3360 South Ocean Boulevard. I'm confused. The sand, as I understand it, is sand that the Town of Palm Beach is recommending. That's what I understood when I walked through that door. That was different sand than the County sand.

MR. LIPS: You mind speaking on the microphone? He's handing it to you there on your left.

MR. BONANO: Sorry about that. Do I have to repeat everything, or can I just keep going?

MR. LIPS: Keep going.

MR. BONANO: Anyway, my name is Charles D. Bonano. I reside at 3360 South Ocean

Boulevard. I've been on the barrier island for 30 years and I've also been on the ocean for over 50 years and I've been through this kind of thing up in Cape Cod and so forth and so on.

When I came through the door tonight it was my understanding that the -- my question is about the sand and then I'd like to make my statement. It was my understanding that the sand was approved or met the approval of the Town of Palm Beach but wasn't necessarily the sand that the -- that Palm Beach County would have supplied or recommended. Is that still the case or has something changed?

MR. LIPS: Well, we can -- I can answer that, but, yeah, that's really a comment for just after this because we're just trying to go through --

MR. BONANO: Then I'll get right to my statement to conserve time.

MR. LIPS: Okay. We're going to call -- we're go through the list of people who -- who are on the list to make comments, or we're just going to call them off one by one if you don't mind so we can keep on track. We're getting to the point where we're going to make public

comments just after we're there.

MR. BONANO: All right. Well, I had a statement to make, I'll make it later on. Whatever you wish.

MR. LIPS: Okay. Just hold that thought. Right now -- there's four ways to comment on the draft. You can do it publicly. You can comment, you know, we have forms here you can make. We have a court reporter, or you can mail in comments to us directly. You can email right here (Indicating).

Right now we are transitioning to stakeholder comments.

MR. EUBANKS: I have one more quick question. I hate to interrupt. John Eubanks for the record.

I had a quick question, and this goes back to the process not the public comment because we'll get into that in a minute. But my question was you had mentioned in here a couple of things that there's been some changes made, there have been some things added, and I was wondering, okay, now that we've made those changes where are those going to be reflected in the draft EIS? Will people get a chance to

see those, and will there be any other time to make additional comments because right now it looks like we only have one, and now I'm coming to learn from what Ms. Erickson is saying that normally there's a little more give and take and some of those things are even addressed before this. So it's just a procedural question, I guess, if you will, if there is any changes do we get to see them, and do we get to comment on it?

MR. LIPS: The Corps of Engineers' process in the Jacksonville District is we do a scoping meeting, everybody contributes their ideas and their issues that they have with the proposed project, they identify the concerns, express whatever they need, whatever they feel is appropriate. We take that information, we compile it, we go through it and then we include it in the draft Environmental Impact Statement and that's where we are tonight. So everything we have that was contributed during the scoping is what you see in the draft. So that helped evolve that document. The Jacksonville District doesn't engage with, you know, public -- NGOs and things like that, you

know, the comment period is where we'll always consider comments but we're not going to reach out and hold forums other than the scoping meeting that we had.

MR. EUBANKS: That leads me to just two quick comments. One, I didn't see the SOS. Was that in there, the alternative, their alternative that's actually defined in there?

Two, the second issue was I understand you're not reaching out to folks but apparently somehow something else is now going to be in there or considered just in the comments you made, in the opening comments, that's all I was asking. Those things that have been added, those things that have been added into the draft, well, that means then it's a different draft, that's all I'm questioning.

MR. LIPS: No. No. Just to clarify, those issues are what we uncovered during the time period between scoping and right now. So we found new information so we included it in the draft. If we didn't include it we'd have to go back. But at this point we uncovered those new issues between scoping and now we've included that so we are covered. We're not

going to go back and have to do anything more with the draft at this point. So they're not -- they're not new -- when I say "new" at the time of scoping they weren't -- they weren't available. They weren't protected under the Endangered Species Act. They are now and we included them in the draft so that's what I'm referring to is the new regulations and new laws that came in that were related to those resources.

But there is another opportunity for comments, is at the final impact, final EIS. So after this we're going to take all the comments, go through it. We're going to revise the draft, incorporate appropriate comments that we're going to consider and then, you know, we'll have another opportunity for comment at the final Environmental Impact Statement. We'll release that. There's going to be an NOA. I had the -- I had the -- Just one thing, the notice of availability is right now tentatively schedule for June, 2015 so at that point if that schedule holds they'll be another 30-day comment period for the final Environmental Impact Statement.

UNIDENTIFIED SPEAKER: I have a question. Would you clarify -- my question is did I understand that there will be no changes to the draft?

MR. LIPS: No, that's not correct. The draft is what we have tonight. That's our current understanding and our -- all the information we compiled is in there; however, things that you guys express, and stakeholders and federal agencies, this is just a draft so once we release it we're looking for input. We're looking for feedback on -- did we get it right? Do we need to look somewhere else? Did we miss anything? So, yes, if we undercover those things we are going to update the draft once it goes to final between the draft Environmental Impact Statement and the final which would be sometime in the summer of this year we would be adjusting the draft and making it morph into the final with all the information that you guys provided and any kind of new information that we uncover between now and then.

UNIDENTIFIED SPEAKER: Thank you, very much.

MR. LIPS: Sure. Anybody else on the process because otherwise we'll go right in to the public oral comments.

We're going to ask that you step up to the mike or we have the mobile microphone. It's going to be -- just make your statement. It's going to be three minutes and we'll go through the list of people -- we're not going to have -- it's not going to be a feedback. You're going to make your statement. She's going to record it and then we'll go on to the next person.

The first person, Todd Remmel. If you don't mind, state your name.

MR. REMMEL: Good evening. I'm Todd Remmel. I'm the current coastal preservation liaison for the Surfrider Foundation.

I just had a -- we had a comment in regards to the offshore borrow areas. The plan proposes using sand from the north borrow Area 1, south borrow Area 2, south borrow Area 3, or, quote, any offshore sand source that is consistent with the BMA cell-wide sediment quality specifications. And I think the criteria is a bit more stringent than the

original Reach 8 sand quality. I think a couple of the borrowed sites previously explored for Reach 8 wouldn't meet the grain size or Munsell requirements of the current BMA, but I feel it's worth asking what the new criteria will mean in terms of sand sources that can be used. Thanks.

MR. LIPS: Thank you. Michael Sharp. Is that right?

MR. VOICE: My name is Michael Sharp. I live here in Palm Beach at 225 Dunbar Road.

I read certain parts of the draft Environmental Impact Statement and it seems to indicate that the Town of Palm Beach has adopted, as its preferred choice, Alternative 2 in your plan. And a further statement I saw that sort of disturbed me was that there's no need to consider further the SOS plan. My question is why? The plan, Alternative Number 2, provides for just dune restoration which at best gives you 15-year storm protection, from what I understand, versus the Town and other parts, all other parts really, other than Reach 8, the objective is to get 25-year storm protection, i.e. beach restoration, not just

dune restoration.

Also, the proposal, the supposed proposal that's been chosen as Alternative 2, and I don't know if the Town decides this or you have the ability to guide the Town to a more sensible solution, the proposal uses an inferior quality of sand, smaller grain size and that requires more sand to be used. That, as I understand it, could result in problems in obtaining permits and, perhaps, another Surfrider litigation redux. I don't think we want that. I think we want a solution for Reach 8 that is the same as what's provided for South Palm Beach, Lantana and Manalapan. I don't understand why the difference, and I don't understand if the Town has chosen that inferior plan why you, The Army Corps of Engineers, hasn't educated the Town as to what would really be best.

The SOS plan, which I have some familiarity with, would provide 25-year storm protection versus a temporary fix. We tried the temporary fix in the past, in 2006, with the same inferior type of sand and sand size that is being proposed now. It washed away.

It accomplished nothing. To do the same thing over and over again and spend a lot of money just doesn't seem to make a lot of sense to me. Mined sand, as I understand it, could be more consistent in terms of grain size and if what is proposed is an average grain size of .25 millimeters when what's really desirable is grain size of 38 to 42, .38 to .42 millimeters, why aren't we going for what's desirable so that we can adopt a solution that has some chance of being successful in the years ahead? Thank you.

MR. LIPS: Thank you.

MR. LIPS: Robert Davidson.

MR. DAVIDSON: I'll speak after Karyn Erickson.

MR. LIPS: Okay. Connie Gaskway (phonetic).

MS. GASKWAY: Good evening. My name is Connie Gaskway (phonetic). This is what the County, the sand that the County received after it guaranteed that they were going to get good quality sand (Indicating), and this was placed on Carlin Park Beach (phonetic). It's nothing but mud. And you could see here that they're

giant scarps. I think with the EIS and the borrow areas that they have I think the only thing that's going to be really a solution to Reach 8 is using the up loose sand source and make sure that it's washed and make sure that random truckloads need to be inspected, but it's the only thing -- you're going to be paying a lot more money for it once but it's going to stay on the beach. It's not going to cause the environmental impact that the other alternatives are and it is good quality sand. Borrow areas 2 and 3 are a disaster. To be put on -- and we're going to find out about borrow Area 1, whether it's good or not, because there's pictures here that show it's still black. So my proposal is the original one using the upland sand source and washing it. Thank you.

MR. LIPS: Thank you for your comment. Buck Carlton.

MR. CARLTON: Buck Carlton down in the southern part of Palm Beach.

I think we've got a flawed plan here. I think we need to talk about consequences. We've already run through and have been shot

down by the Florida Department Judicial Branch for having a plan that calls for dredged sand and calls for miniscule sand. So why do I go through it again? We don't want to go through it again because we don't want litigation.

Now the second thing that's wrong with this plan is we have 25-year plans for half of Palm Beach and 15-year plans, which really isn't a plan because it hardly even gets you to a hurricane status. Now I think 100 years ago when they put people in the lower parts of the Titanic and they were allowed to drown and the people with more money were getting lifeboats, we're looking at the same thing here. The question is if you have something this divisive that is so discriminatory you're obviously going to have a lawsuit. You're going to have a lawsuit when people are shot down with sands coming through the ground from the water before and you're going to have lawsuits from the people who discriminate against. What does this mean? This means we're going to have another six years of litigation. We're going to have another four years of probing. We're going to be ten years out. We're three years

overdue already for a major hurricane and we are not talking about a cent. We're talking about life safety. We're talking about over a billion dollars in property that's going to be destroyed. We're talking about 2,000 people living there who are going to be at risk for their lives and if the Corps of Engineers cannot tell the Town Council -- it's not the Town, it's the Town Council -- that if they don't come up with a plan that meets a 25-year protection for everybody in the Town and for the County of the Town of Palm Beach then they are not going to be considered. They shouldn't even be considered. It's crazy. Anyway, thank you.

MR. LIPS: Thank you. John R. Umbrowski.

MR. EUBANKS: It's Eubanks. The attorneys have bad handwriting but that may be the worst I've seen.

For the record, my name is John Eubanks, and actually I represent Buck Carlton who just spoke so passionately as you can see.

We also provided you -- I emailed you last night -- a rather lengthy, detailed letter asking some of the same things. I won't go

through all of it but I do want to touch on some of those things.

As you can tell, people like Buck, they're excited because, look, we talk about dredge materials, we talk about sand and everything else, they look out their window and they see the ocean versus what's left of the beach and they go "The ocean is winning and it's going to win unless we do something." And as you can tell Buck and many others have said the same thing, look, let's put in place a plan which is very similar to the rest of the Town that provides for a 25-year storm period and the protection from that. And there's no reason, they don't see any reason, why we shouldn't do that.

Now the problem is, looking through the six alternatives you've given and the reason I asked about the SOS plan because I didn't see it in those six, none of those do what is being done for the rest of the Town for the 25-year storm period. So what he would urge is, obviously, let's do the same thing we're doing for the other parts of the Town. Not only has he urged it as you've seen from my packet,

there's a letter from the Town Council itself back in April saying, hey, we would ask you, United States Army Corps of Engineers, to give the same consideration, give the same consideration, SOS has brought this to us, we want you to give the same consideration and, in fact, look at the 25-year storm protection. So we'd ask you to do that too.

The second issue is we've all talked about and I'm sure we'll talk about it again is the quality of sand. Clearly it doesn't mean anything if we get loose sand that you have to put two to three tons more on the beach expecting a lot of it to wash away. Most of the people in this room probably saw in 2006 offshore dredge materials go on to Reach 7, I think it was, and 85 percent of it washed away in less than three years. That's huge. Nobody wants a repeat of that. Nobody also wants a repeat of the Surfrider Foundation where we spent years and we end up in litigation because whether it's your permit what my understanding is there's still going to be some other permits out there that will have to come back through FDEP and if we're putting poor quality sand on

and then if we're being told it's because it's cheaper than it's not cheaper because, you know, the old adage is you buy cheap you may have to buy twice, and if the problem is if it's all going to wash away it's going to create those type problems.

The other aspect is just looking at it why would the Town of Palm Beach allow itself to be -- do something different than the County. The County is, in fact, using upland mined sand. The County is, in fact, using sand of a better quality and it's going to stick. It's going to settle better. It's not going to be as much problem with the hard bottom. There's not going to be any problems with native species. I don't know why the Town would actually say, well, we really would prefer something that's -- from everything we've seen -- is a lot -- is a lot inferior. So at the end of the day I think everybody who's involved in this, everybody who looks out their -- out their window is not looking for the quick fix. They're looking for the correct fix and we would ask you guys go back through the process, look at it again, look at the SOS plan

which is the only one that seems to start from the provision of providing a 25-year storm period protection. Look at it again and look at the issue of using the upland sand versus repeating the same thing over and over again with the inferior sand. I appreciate it. Thank you.

MR. LIPS: Thank you for your comment. Sorry for messing up your name.

MR. EUBANKS: That's all right.

MR. LIPS: Richard Hunegs.

MR. HUNEGS: Thank you. My name is Richard Hunegs and I'm a resident of 3360 South Ocean Boulevard. As an active participant, that is our condominium, as an active participant in what will be the project, because we've given Town access over our property to do the work that we're now discussing, they're going to build a temporary road through our property, this is the third time they've done it with our property, and I think it's fair to say that we've been ready and quick to try and provide the access necessary to the beaches for all the condominiums in our area. We have an agreement

with the Town that was carefully drawn by the Town and I executed it on behalf of 3360 because I'm the president of that condominium. We've been through this as -- as counsel just reported to you a few moments ago -- more than once. The last time was the fiasco of 2006. And I call it a "fiasco" because, again, we used the wrong sized sand from the wrong borrowing sites and -- and we don't need to repeat that more than once, I don't think. It was costly, expensive and we all, as taxpayers, paid for that.

Going back even a little further than that we've had litigation over those kinds of issues. As I've been told by the Town Manager and others that litigation cost the Town $1 million in attorney's fees and costs, but it doesn't begin to touch on the real costs which were probably another $3 million in the effort to put the sand on the beach that was the wrong size, incorrect, and once again left us with baron and dangerous beaches and dunes that expose the ownership of the condominiums and homes along this beach.

So once again, as I see it -- I'm just

going to read some of this to try and shorten up my statement -- once again, as I see it, the Town of Palm Beach is about to engage in an Atlantic shoreline project that is both high risk and expensive. Speaking for more than 1,000 people who belong to and are members of the SOS we propose a far sounder, less riskier plan that in the long run is no more expensive and gives far greater protection. As in all scientific discussions one must be sure that comparisons of data are accurate or the conclusions to be drawn will be erroneous and that's your business and I understand that. As an engineer that's your coin of the realm. That is your knowledge. Fortunately we have a historical precedent to look to here in Palm Beach as a comparison to the present Town plan and that's the 2006 fiasco. It was a failure, a blatant failure and a waste of money and the proof of that was the judgment made by a hearing officer who said not only was it an abysmal failure but that it impaired the environment and caused an environmental disaster because we used the wrong size sand and we're about to try it and do it one more

time. So if we go back to those kinds of lessons apparently -- apparently the Town hasn't learned that and apparently we need to repeat that at least once more. I learned in playing baseball that three strikes and you're out. I think in a fiasco like this probably one strike and you're out. I don't know that the Corps of Engineers would want to approve a program that repeats that kind of disaster. I'm sure you don't want to be complicit in it. I think that's why you want to hear from all of us to make your own determination as to whether or not this plan is a sound plan. We have hired a coastal engineer who has worked for us for a very long time because this has been a struggle for the Town and for the Town's citizens, what to do, how to do it, and make sure that we don't repeat the old mistakes. To sustain her credentials, she's worked for the Town and has produced the most successful efforts in the Town's past in terms of engineering beaches. She can tell you about that and I'm sure at the appropriate time you'll call on her and allow her to testify. So rather than have multi-million dollar

fiascoes repeated again for the Town we'd almost rather have you do nothing, absolutely nothing, and then see what the consequences are.

Coastal engineers agree that grain size of sand is critical. And if you look at the grain size of sand that's proposed here it's a repetition of 2006. You're going out in borrowing sites in the ocean when mined sand is available to you on the land, available to the Town on the land. And guess what? The County is using that land-located sand. They're using it in the Town of South Palm Beach. They're using it in Boca Raton. They're using it in Manalapan. So it isn't as though we don't have experience and the engineers don't have experience with the nature of the sand that's required and recommended. This isn't anything more than science and I don't know why we'd want to violate the principals of science. If it means that we're somehow saving money, I don't see that because we keep repeating the same mistake every three years. How can we be saving money? The only way to save money is not to do it and endanger all the properties on

the eastern Atlantic seaboard of the island, or to do it right once and for all. Coastal engineers agree that the grain size of the sand to be used on projects of this kind is critical to success. The Town's consultants have, once again, advised the use of the lowest possible grades of sand to be dredged from the ocean unlike the County that's getting it from an on-land site where they can inspect it and see it. And it's placed on dunes as a band-aid to solve the critical erosion problem. We experienced that before. This is the third time our condominium has given access to the Town to come through with a proposed repair of the beaches and dunes. So we have experience with that, and to use a band-aid for this critical erosion problem is an absurdity especially when you've experienced it already and we've seen the losses and we've seen the fact that our money has been wasted and washed out to sea. That has contributed to the problems that have been pointed out by all of us who I think are true environmentalists at heart.

It was pointed out by one of the speakers

just a few moments ago they don't want a project that creates and compounds the problems that you addressed before when you were talking about nesting turtles and the other sea life that we need to be concerned about. We put out our lights on our beach during nesting. We follow the law. And we're anxious to make sure we have a beach that the turtles can come on to and lay their eggs. Those kind of beaches are disappearing and I think you have recognized that as a coastal engineer yourself.

I'm not sure why we'd want to repeat the mistakes of the past and do this over and over again. I don't know why Palm Beach County has devised a plan that's better than the plan that the Town of Palm Beach has devised, and the Town of Palm Beach doesn't want to engage with the County. The County has offered to do that. That would solve the substantial part of the problems that we all are concerned with and that we all are talking about. Palm Beach County has gone so far as to go just to the Town of South Palm Beach to erect -- erect structures to keep the sand. They have mined the sand that's of the appropriate size on

land. The Corps of Engineers -- the Corps of Engineers is certainly capable, certainly capable of devising and adopting the plans that the -- that the State has put in place and cooperate with them. And I guess I'd ask the question what possible excuse could there be in not asking the County of Palm Beach to participate with the Town of Palm Beach in solving this issue and solving this problem once and for all. It defies for me, it actually defies common sense, good judgment to be mired in to these old failed schemes and just keep doing them over and over again. All the citizens are sick and tired of that, watching their money wasted on programs that don't work. Is it a coastal engineering problem or is it a Town problem where people just want to look at the easiest solution and the cheapest solution rather than the best solution which over time is the cheapest solution. So we don't want to be a place that settles on impoverished ideas. We're capable of doing better and the proof of that are for other plans in the same Town where better work is planned and better work is being done. If

you fail in one third of the Town or half of the Town or two thirds of the Town it's immaterial, it's a failure. The Town needs equal protection for all its vulnerable beaches for the same reason that a team is only as strong as its weakest link. The Town of South Palm Beach, as I said, the County of Palm Beach are, as we speak, implementing a much better program, infinitely better, and they're doing it with care. And I've met with the engineer that's in charge of the projects and he's available, as you know, to this -- to our Town, both as a consultant and both as one who will offer the County assistance.

MR. LIPS: Would you mind wrapping it up?

MR. HUNEGS: I'm going to wrap it up right now.

MR. LIPS: Thank you.

MR. HUNEGS: I appreciate that, for your generous allowance of time.

Let me say just say this: Here in the Town of Palm Beach the conservative thing to do, the conservative thing to do is to preserve our beaches and to do this correctly one time. It's the conservative thing because it's the

least expensive in the long run. It's the best and it provides the protection that people deserve. So let's allocate our resources without waste. We, once and for all, need to have the job done that lasts and is prudent. Thank you.

MR. LIPS: Thank you. Larry Goldberg.

MR. GOLDBERG: Hi. My name is Larry Goldberg. I live at 3360 also where Mr. Hunegs lives. I will not be as eloquent as him, and I'll be shorter but I have few things I'd like to tell you.

I submitted comments to you after the public scoping meeting. My hope was that you would have an open process which would help develop much needed shoreline protection. However, no public progress meeting, as called for in the CBI scope services, was held to review the status of project design analysis and obtain stakeholder input, so now we have to comment on the finished DEIS report. I'm going to cover just a few items and I'll give more to you in writing.

You now state that your overall project purpose you chose a 15-year interval criteria

for evaluating upland infrastructure protection. This is not consistent with anything that we've received from anybody. The Woods Hole Group has said that you should have a 25-year interval for beach restoration and a 15-year interval for sacrificial dunes. Woods Hole also said that for sacrificial dunes you need a 17-cubic yard per foot fill. The only volume where this is achieved in Reach 8 is by Alternative 7 which is the SOS Erickson project. However, this is not a dune project. It's a project for beach nourishment and stabilization to provide for shoreline protection. It's intended to establish a new beach and dune profile in an area where this has never been done before. You revised your approach to the analysis of the project. You originally considered them as similar and said that they should be evaluated together. Now you say they're not connected. This flies in the face of the scope of the FDEP BMA which is doing inlet-to-inlet analysis and the Woods Hole Group which recommends, at a minimum, using groups of reaches for better management. There should be no gaps in contiguous beach

dune projects to ensure that there will be continuous shoreline protection. The plan that we have shows two beach nourishment projects separated by a dune-only project and that doesn't work, we've seen that before. It just helps the beach areas wash away. Protection of this plan, the one that's proposed versus the continuous beach nourishment project like Alternative 7, the Erickson Plan, should be evaluated to determine the best solution. By excluding the SOS Erickson project and not modeling its effectiveness you did not get a clear picture of how that alternative provides maximum shoreline protection like reduction and overtopping with minimal hard bottom coverage and impact on aquatic resources. A detail analysis of that project must be included in the final EIS.

MR. LIPS: Thank you, very much.

MR. BONANO: I introduced myself before, Charles Bonano, 3360.

I guess I now understand why I'm so confused about the sand. I will just make a very simple statement and than I want to make one other comment about an area that didn't do

anything in a timely fashion.

After listening to everybody here I concur and I am opposed to the project in Reach 8 as it stands. The Town needs a 25-year beach and dune renourishment to protect all of the investment and residents.

In the summertime I -- I spend time in Gloucester, Massachusetts and I had to go back to an area after there was an unnamed storm. It was the perfect storm. And that blasted the coast and it was on a ledge. With all my years of being on the ocean and experience with loss, rip wrap and so forth and the discussion tonight earlier by the president of our association about six years and having watched this beach wash away with or without sand, the dune wash away, a very dangerous condition exists. I actually believe there are threat to life and limb if we have any kind of a major storm and I can almost assure you that we will have a storm and we will have a breach in that area in the next six years if that's what it's going to take.

By the way, does the Corps of Army Engineers, are you aware that we actually did

have a blow through down in the south area of the island, because we did. It occurred in the -- in the 90s and it was three or four buildings south of Dune Deck. It was a sunny day. It wasn't particularly high winds, and it was attributed, by the newspapers, to three or four rogue waves. Now those rogue waves came up, went right through the beach, blew the beach away, blew the wall away, went into the pool, went through the building out on to the street and when I was coming home from a haircut and I saw all this green debris out on A1A I thought that landscapers -- a trailer had been lost, but it wasn't, it was seaweed. So we're already there. The next storm that we have of any -- of any significance along with a surge we're going to have a breach, plain and simple. So we not only got to do this, do it fast, we damn well better do it right. Thank you.

MR. LIPS: Thank you, very much. Robert Davidson.

MR. DAVIDSON: I'm after Karyn Erickson.

MR. LIPS: Heath Chude, C-H-U-D-E.

MR. CHUDE: I'm Heath Chude, 3000 South

Ocean Boulevard representing the Bellaria Condominium. Since so many comments have already touched on a lot of the points that we wish to make I'll simply say that we at the Bellaria are also opposed to the project as proposed and believe that mined sand must be used and a 25-year storm protection plan must be considered.

MR. LIPS: Thank you, very much. Dr. Sanford Kuvin.

MR. KUVIN: Good afternoon. There's been a confluence of problems with the Corps that brought us here today. We've lived here 50 years. My name is Sanford Kuvin, 149 East Inlet Drive. I think that it is fair to say we are on the way to becoming "Palm Beachless" and unless the Army Corps of Engineers gets through its bureaucratic mode and gets on to the common sense that many speakers have vocalized here today, including Mr. Hunegs, we will become "Palm Beachless." No matter how many millions we pour into poor projects we haven't come up with the right solution. Just recently, last two weeks, you had the -- the Corps has had two emergencies. They wanted to

take about 10 feet of sand away from the inlet to allow larger ships to come through on an emergency basis and that sand which was dredged by Meek (phonetic, I believe, was supposed to go south on to our beaches. But it didn't go south. It went north. Why on earth that sand went north up you to Calduer Island (phonetic), where Connie Gaskway showed you that dirt, is beyond me and nobody seems to know why, or at least readily why.

Another point is that the Corps has basically ignored the lifeline to Palm Beach itself namely the sand transfer plant which has been shut down totally for almost a year now whereas before it was pumping 220,000 cubic yards a year, now it's moving virtually nothing and not the Corps and not the County, not the Town, knows exactly why. One prominent theory that's floating about is that the mitigation reef up in Riviera Beach is -- has pods which are drawing sand offshore and, therefore, no sand, or virtually no sand, is coming to the sand transfer plant.

In addition to that the sand transfer plant actually broke down and has not been

repaired in several months. I've called repeatedly. I've never received one phone call back from the engineering firm that's dealing with it. I would imagine the Corps should know why the electrical system has not been working. If it is working they've not indicated what was broken in the first place.

The threat to the Town now is getting more and more serious and certainly more and more real. We don't want to become "Palmless Beach" we have to do something proactively. And there are good people out there that can do that and create a basis for a 25-year storm and other things that have been requested but one thing that has not been suggested is take perhaps a holiday for a year and just stop this bickering about who is right and whose got the right grain size until the companies that this Town has paid hundreds of thousands of dollars in consulting fees is allowed to express itself by consulting.

I would urge the Corps to -- years ago it had a meeting, about two years ago, and said it's going to be transparent. It hasn't been transparent. It hasn't been proactive, and it

hasn't been communicative to the citizens. And I think what Mr. Hunegs said, maybe a little bit facetiously, but I think it has merit, take a year off and just see what happens and maybe we can save a few hundred million dollars. Thank you.

MR. LIPS: Thank you. Eileen Curran?

MS. CURRAN: I decline and will speak after Karyn Erickson.

MR. LIPS: We only have three more so if you wanted to do it now I think, you know, Karyn will have enough time. If we can put her last --

MR. ALLEN: I'll go.

MR. LIPS: It's you three.

MR. ALLEN: My name is Robert David Allen. I live at 2100 South Ocean Boulevard in Palm Beach. The Noble Prize winning economist Milton Friedman once said that if you put the federal government in charge of the Sahara Desert in five years they'll be a sand shortage.

After decades of shoreline mismanagement by successive Palm Beach governments a Town named for its beaches now has a beach shortage.

No where is the situation more acute than in the south end of the Town of Palm Beach. Sad to say, the south end beaches are now in a death spiral where hard bottom is uncovered. The hard bottom transforms to habitat which can't be covered which leads to more adjacent hard bottom being uncovered and so on ad infinitum until there is no beach left.

Sadly this project being proposed could have been a win win win where the Town uses the taxpayers' money efficiently to produce a successful project, the property owners would see their beach preserved and their property value safeguarded, the environmentalists would have gotten a project with less environmental impact and the County would have gotten a compatible project. Instead the Town has proposed, and the Army Corps has endorsed, a lose lose lose. The Town will overspend on a failed project based on inaccurate modeling, substandard sand and lack of structures. The property owners will be no better protected one year after the project than they were before it started and the environmentalists and other interested parties will have reason to sue

again to preserve the environment. Let's give this important decision the time it takes and the facts it needs to get it right. Let's not rush to judgment. Thank you.

MR. LIPS: Eileen Curran.

MS. CURRAN: My name is Eileen Curran. I live at 2778 South Ocean Boulevard. I have lived on the shoreline of this barrier island in Reach 8 for 25 years. I have watched the wide beach in front of my home disappear through erosion and neglect. As a member of the first Shore Board of the Town of Palm Beach I learned firsthand from 12 different coastal engineers, who were from Florida all the way up to Massachusetts, including Woods Hole Institute, they said, and they were all in agreement, dunes are the last line of defense against hurricanes and catastrophic storms. These 12 coastal engineers explained that the function of a sand beach is as a blotter in absorbing the force of the waves and thereby it reduces the damage to the dunes which are there as the last line of defense to upland properties and to the infrastructure and to the residents.

I want to state my objection to another dune project that will use minimal grade sand that is dredged with no beach nourishment in front of all the dunes on Reach 8.

I want to see the United States Army Corps of Engineers recommend in its EIS the first beach nourishment using mined sand that will provide 25-year storm protection for the homeowners of Reach 8. Thank you.

MR. LIPS: Lou Crampton.

MR. CRAMPTON: Hi. Good evening. My name is Lou Crampton. I live at 2335 South Ocean Boulevard and I'm the chair of the Citizens' Association of Palm Beach, one of the commenters on the report. I might be the only person here to say that I think that in the context of the process that we're going through, and I have to say that I spent seven years at the USEPA so I know a little bit about how this process works, that it's a positive document. Clearly the no action alternative ranks below the various action alternatives that were outlined and -- the report makes the case that there's environmental value and even benefit in moving forward with a significant

sand placement project. That's a key finding, folks. That bloggers well for our future because if the report had found otherwise the whole process would stop right here. Nothing would happen going forward. The bedrock issues in this report, and there are two of them, one -- and I read every page of this damn report -- Number 1, sand quality and grain size; and 2 hasn't been touched on, but it's even more important is hard bottom mitigation. The report does not supply enough clarity on those two issues, clearly on sand. There's a huge amount of confusion about what's going on. I do recognize that. I mean the report needs to make clear that the BMA which guides what the state will permit and what it won't permit requires sand at a .25 grain size. That needs to be made a lot more clear, and the report also needs to be clear about the need for constant monitoring as Connie Gaskway said of both the color and the grain size of the sand. So if the borrow site isn't working then we switch to mined sand from Ortona.

The other issue is hard bottom mitigation because the report creates confusion on that

point especially with respect to the amount of hard bottom mitigation that the Town is required to take on and how much hard bottom mitigation that the County is required to perform. There is a significant difference between the two. Something like .5 acres I think for the Town and something like 4.2 acres for the County. That's not clear in the report. At least I didn't get it. At $1 million an acre, $1 million an acre there's a tremendous savings and a tremendous difference for our Town.

Moreover, because mitigation costs could be less for us than originally thought, there's a good possibility that we could ask for more sand in Reach 8 than we originally thought we could simply because of the fact that we thought hard bottom mitigation costs would be so high.

I think -- this is advice to you -- clarifying these points are very important, as you've seen, to bringing better decisions to our part of this Atlantic coast. We are, after all, the Town of Palm Beach, not the Town of Palm, and we want a solution to our problems

that will last for generations to come and can be built on year after year with confidence for property owners and for all of the rest of us who live here. Thank you, very much.

MR. LIPS: Thank you for your comment. We have two more and then Karyn Erickson.

MS. GREENBERG: Thank you. My name is Madeline Greenberg. I'm a property owner in the Town of Palm Beach in Reach 8 who happens to also live at 3360 South Ocean Boulevard.

First, because of the poor timing of the holidays and the departure from the standard protocol that is normally followed for the EIS process, due to the fact that there are errors in the profile modeling which would include the hard bottom and other aspects, I request that the US Army Corps of Engineers give a 30-day extension of the public comment period for this South Palm Beach Island Comprehensive Shoreline Stabilization EIS Project for Reach 8.

I object to the fact that the Town of Palm Beach and all the alternatives offered by CP and E for Reach 8 using the lowest standard of dredge sand which apparently the Town of Palm Beach has a lower standard than the rest of

Palm Beach County for all the beach projects that they use versus using mined sand, palm Beach County is using only mined sand in their preferred alternative and, therefore, everything being studied for the County is using mined sand. All of the alternatives studied for the County and for -- are in that capacity and yet all the alternatives being offered for the Town are being offered with dredged lowest standard. The .25 that was referred to is the lowest standard. We live in the Town of Palm Beach which is supposed to be a premium town. Why is it that Palm Beach County uses better sand than the Town of Palm Beach? I think that's pretty disgraceful.

I object to the fact that we also -- they did not consider, in the Reach 8 part of the project, using groins. They keep referring to, and it's very confusing to the public, that there are groins. Those groins are for South Palm Beach and down for the County portion. The Erickson plan, the SOS plan, had two groins in hotspots and yet that was not given consideration.

I'm opposed to the project as it stands.

Reach 8 needs 25-year storm protection for this project and mined sand and the only alternative submitted to the US Army Corps that offers 25-year storm protection to the upland project shoreline is the Karyn Erickson SOS Beach Nourishment Plan. The SOS plan submitted uses mined sand source, but that's not the way the Army Corps studied it. The object of the SOS plan is, as it is submitted, was -- had groins and mined sand. Town Council on April of 2004 asked the Army Corps to give, quote, equal consideration, unquote, to 25-year storm protection to the project shoreline. The current draft EIS does not give equal consideration to 25-year storm protection as the Town Council agreed to give the SOS Beach Nourishment Plan.

I object to the fact that the Town is using 15-year storm protection. That's what they applied for and of course 15-year storm protection is the equivalent of protection from one tropical storm. They're in the plan that the alternative that the Town provided there is some beach in front of two or three condos and the rest -- in the middle of no where -- and

the rest of them -- the rest of the project is basically dunes. Those two or three condos that they think they're going to get sand that's going last, they're dreaming. It's going to wash away.

The last thing that I wanted to say is that it's very important that the Army Corps of Engineers listens to the public. It don't use -- do the wrong project -- I don't -- I think that you should do the right project and I think that the Town Council will see in the wisdom when they do decide to vote for the right project, it's not more expensive. It's more expensive to lose the condos and maybe there's a lot of information that hasn't been brought out. If you give this 30-day extension then you will find out there's a great deal more information than is in that draft EIS. Thank you for your time.

MR. LIPS: Thank you, very much. Karyn Erickson.

MS. ERICKSON: Thank you. As you, I believe, are aware, Erickson Consulting Engineers represents the coalition to Save our Shoreline who is represented earlier by

Mr. Richard Hunegs.

I'm a licensed professional engineer in the State of Florida and I have more than 35 years experience in planning, permitting, environmental impact assessments and statements through construction of large-scale beach restoration projects in Florida, North Carolina and South Carolina.

One of these projects was noted was the Midtown project which was the first restored beach at the Town of Palm Beach in 1995. That project was highly successful because while it was an offshore sand source we looked very closely and found the coarsest material within the borrowed site. We didn't compile all of the sand and mix the fines with the coarse and it was a very successful project also because we used structures to slow erosion losses.

With respect to the project before us we received the draft EIS statement for comment and review after many prior requests for updates and a preliminary copy of the EIS on December 8th. A summary of our comments will be presented tonight with our full written comments to be submitted in writing prior to

your deadline which we would request would be extended an additional 30 days given the volume of material which I see is more than 1500 pages with a number of discrepancies I'll point out tonight.

But a quick brief summary of our findings is that the plans preferred alternative for the Town section uses a fine offshore sand source, quantities that actually approximate very closely the losses that occurred in the 2012 Hurricane Sandy event. And it excludes any consideration of groins or structures to slow sand losses. Further, it does not evaluate the differences in sediment erosion rates and longevity nor its impact on the adjacent hard bottom of using coarser sand at .57 millimeters or .45 millimeters which is closer to native sand and the .25 millimeter sand. There's only one type of sand that was analyzed. In contrast, the County uses and considers coarser sand and places their sand at twice the density that the Town is going to be seeing if this project were to go forward and they incorporate structures to slow erosion.

In my discussions with the County's

representative they state they consider this a very minor project, and yet their project is backed by seawalls which they're relying upon and is twice to four times the project that the Town will be seeing in this EIS preferred plan.

The specifics of our findings are -- in terms of the evaluation of alternatives, the SOS alternative which is described in only the modeling section as Alternative 7 is not evaluated or represented as stated in the base -- in the main part of the EIS document. The SOS preferred project alternative looked and evaluated three types of sediment and sand and cost of those and it also considered overfill factors that are required to approximate a natural native beach sand such that one cubic yard of native beach sand often requires two cubic yards of offshore sand to behave the same way in an erosion or storm event. The SOS alternative places volumes and represents volumes inaccurately. The EIS states, quote, recognizing SOS's request for a project with additional storm protection the Corps of Engineers modified the SOS fill design. So they took the design that we

developed, modified it, greatly reduced it, and took the sand and reduced the quality substantially. This is not the SOS alternative and should be struck in any reference.

Specifically, five brief points. The SOS volume of 99,100 cubic yards was assuming a three to four-year renourishment with two structures towards the south end to slow erosion. It also assumed a coarse sand that was comparable to Ortona or upland mined sand. This is a significant discrepancy by modeling what is referred to as the SOS design using .3 millimeter sand when, in fact, the Town is proposing sand that could be as fine as a mean grain size of .25 millimeter; therefore, the results are not reflective of the Town's proposal. And when we say "mean" that means that 50 percent of that sand could be .1 millimeter, .12., .15, substantially finer sand. The County's preferred alternative includes several low profile groins at a nominal cost of $100,000 each. Coastal structures were not assessed or modeled in the Town's portion of the project as recommended by the SOS plan. Why is that? The quality of

sand, which is a critical component of the SOS alternative, is not considered. The SOS alternative is not accurately reflected either in Alternative 6 which is inferred, which is the Town and the County's plan with increased sand volumes as the SOS alternative includes a dune feature and protective sand in front of the dune to approximate a 25-year protection. The average sand volume loss for a 25-year storm event, which we modeled for the Native Beach, we didn't assume that the Native Beach was .3 which is what we assume the modeling from the results we're seeing in the analysis in the EIS assumed the Native Beach was much finer. For that reason we took the natural beach sand and the models show that you would expect an average of 12 cubic yards of loss per foot per year for a 25-year event, that's the average. The north end is milder so it's a lower volume. The south end, where you're near 135 and 134 monuments, is higher so this is an average. In fact, during Hurricane Sandy the shoreline for this reach eroded 61,000 cubic yards. The design basis in all the modeling performed was based on beach profiles that were

three years old, they were all pre-Hurricane Sandy profiles so the beach that would be built today wouldn't be as wide with just a dune only as what existed prior to Hurricane Sandy in November -- which was, I believe, October of 2012.

The second major point is the grain size which we've discussed, and I'm not going to go much further than to say that in an offshore borrow site, and this is why the County is moving away from the offshore borrow sites in the north part of Palm Beach County, you find a large fraction of finds in areas with coarser material and it tends to be mixed with rock rubble. And this is exactly what happened at Reach 6. They had two borrow sites to pump from. They pumped from the coarser site first and was supposed to end up with a 2.2 overfill ratio, twice as much as compatible sand would be required. Not long in to the borrow site they hit so much rock they had to abandon that part of the borrow site. They ended up at a finer -- they went to the finer site. The resulting sand on the north part of Reach 7 was .19 millimeters to .22 millimeters. And that's

based on our firm going out and taking multiple tests. I know for a fact that the DEP and the Corps and their permit conditions often only require very minimal testing of the sand as it's slurried on to the beach. And as Judge Neal said in his the finding for the challenge of the Reach 8 permit in 2009, you're not going to be able to stop a hydraulic dredge to start testing sand when it's placing sand at 20,000 cubic yards per day. A project that's 75,000 yards or a project up in Reach 7 that may place 3 or 400,000 cubic yards you don't turn off a dredge that you're paying $100,000 a day to go on standby and 3 to $5 million to mobilize. It just doesn't happen. So you need to know when you're going in to a project that you have sufficient sand of the quality you require. Most of these borrow sites we heard time and time again from the Town we meet the DEP's requirements for Corps to represent the borrow site. They meet the minimum requirement. So as an engineer I never go with the minimum requirement. I want to have sufficient coarse to know exactly what's in the sand source so when I designed the Martin

County 4-mile project we required four times as many coarse and we excluded two thirds of the borrow site and came up with the best quality sand and that's what is lacking with looking at these offshore sites. That's the big problem.

Finally, as I noted earlier, the profile data that was the basis for all the modeling was pre-storm November 2011. And it states in the report that while these storms had occurred and likely contributed to background erosion rates there was no major hurricanes that made a direct impact to the project area since the surveys were evaluated, and they implied that the loss and the impacts of Hurricane Sandy were minor and represented average conditions. Well, 61,000 cubic yards for that reach of shoreline is not an average condition. And, in fact, they show no fill necessary near the area of the Atriums which had the very worst erosion and has absolutely no dune there now. There's substantial discrepancies that we would have addressed if we were part of this process six months ago and been able to participate when you set up the modeling. We want to be constructive. The owners want a beach. They

don't want hard bottom in front of their properties.

I have just a couple of more comments and I will wrap it up.

The Town has repeatedly stated that the purpose of the shore front -- in the Shorefront Management Plan that was developed in 1998 that a severe storm impacting the Town representing a 25-year return event should be the designing criteria for these beaches. We recognize that those numbers mean different volumes. What we recommended is identifying that we have three reaches along -- three segments along Reach 8 that represent three lines of building and that you need to designate a baseline in front of those buildings that would be your protective shoreline beach. That is where seaward at that point you would have sufficient sand to weather between renourishment events and still have some protection that is sufficient to weather a 25-year storm event. That's consistent with the Town's independent consultant recommendation from the Woods Hole Group. They recommended in this area 17-cubic yards of sand per foot of shoreline. The SOS plan

recommended 16-cubic yards per foot. This is also similar to what the County will be receiving to the south. We also though stated that because our profiles and analysis occurred before Hurricane Sandy, of course not knowing Hurricane Sandy would occur, we said that if any major storm event occurred it would need to compensate for that volume because the modeling was based on the protection and condition from 2011 which was also the year and the evaluation period that was covered in the EIS.

With respect to hard bottom acreages we believe they're biased. They used two post-hurricane conditions averaging those acreages to represent the amount of hard bottoms seaward of Reaches 8 and the South County. We believe the County also concurs. There's many, many years of data. It's a femoral hard bottom meaning the sand moves off of it and on to it. In 2011 when we evaluated coverages we came up with 2.25 acres of direct impact from the project that was proposed as the SOS plan when the dune still existed prior to the loss of Hurricane Sandy. And I believe that if you average all of those years, as I

believe the County is also going to suggest to you in their written statements as we will as well, you'll find there's significantly less impact.

In general the draft EIS completely fails to discuss the impact of sand quality on project performance, on hard bottom impacts and on costs considering sand quality is a key engineering consideration and biological factor in the design of beach restoration projects. The absence of any analysis and discussion of this critical design factor is extraordinary considering the EIS is a principal decision document for the federal agencies. While the DEP requires a mean grain size of .25 to .60 millimeters their goal isn't for the Town to place the lowest possible quality sand at .25 but to strive to put coarser cleaner sand. Recognizing the impact of sand size and performance on environmental impacts Palm Beach County has self-imposed specification of .3 to .7 millimeter grain size again looking to offshore sand source as a very last resort at this point due to the problems inherent with these sites.

We did a cost comparison of Ortona sand at .57 millimeters recently, very recently, and the unit cost of sand we found for recent projects in these areas is $35 to $70 -- I'm sorry, $35 to $40 per cubic yard. The Stuart mine source which is used by Indian River County and many counties where you can specify the amount of shell content and they screen it so you exclude finds, you can specify a minimum of no more than .25 or .3 millimeters is $32 to $35 a cubic yard. Keep in mind oil prices are plummeting and so is the cost of trucking sand because as your fuel to fill your car goes down the fuel to fill the tanks to truck sand goes down.

Finally, offshore sand, poor quality at .25 average sand size results in a cost of $30 a cubic yard based on the recent Mid Time Project or $46 a cubic yard if you consider the inconsistency of the sand. So, therefore, in your table where you state that the Town's project will only cost $10 a cubic yard to use offshore sand is a gross inaccuracy. It doesn't include the cost of mobilization, the cost of dredging and hydraulic conveyance, sand

placement, grading, site restoration, beach tilling turbidity nor the cost of the original sand source investigation which was over $2 million to permit and design the offshore sand source.

I'm going to finally conclude by saying that why would the Town spend two to three years to develop an EIS at a cost that's approaching a half a million dollars for a dune-only project that does not even require a federal permit because you could have placed all the sand above mean high water and avoided this entire process if that is truly what the intent of the project is to provide protection to the property owners that is meaningful.

That concludes my remarks, and thank you very much for your time today.

MR. LIPS: Thank you. Terry Revele (phonetic).

MS. REVELE: My name is Terry Revele and I am a resident in Reach 8. I'm just shocked tonight to find out that the Army Corps of Engineers could discriminate from one town to another, that we're not all treated equally with the same type of sand. I've also found

out from one of the Council members just now that it was our Town staff that decided not to join in on the County plan and I just am bewildered. It's just -- it's just mind boggling that so many things could be interfering with one another, why we're not all joined, we're not all together. I don't know if it's your fault that we're getting different sand, but I would like to just comment as a resident.

MR. LIPS: Thank you. That's all the comments that were on the list to be given orally. So if anybody has any other comments we have a court reporter here if you don't want to present them in front of everybody you can speak to her directly and she'll take them. Otherwise we don't have any other comments at this time.

We're here until 8:00.

(Whereupon, the presentation, comments and questions are concluded at 7:13 p.m.)

(Whereupon, the meeting is concluded at 8:00 p.m.)

CERTIFICATION OF REPORTER

THE STATE OF FLORIDA)
COUNTY OF PALM BEACH)

I, JULIANN ANDOLPHO, certify that I was authorized to and did stenographically report the above-titled MEETING; and that the transcript, Pages 1 through 75, is a true and complete record of my stenographic notes.

I further certify that I am not a relative, employee, attorney, or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

The certification does not apply to any reproduction of the same by any means unless under the direct control and/or direction of the reporter.

Dated the 13th day of January, 2015

JULIE ANDOLPHO

US Army Corps of Engineers
Jacksonville District
4400 PGA Blvd. Suite 500
Palm Beach Gardens, Fl.
Public Comment Form

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

First Name: Terri Last Name: Rovelli
Address: 3456 S. Ocean Blvd. #302
City: Palm Beach State: Fl Zip Code: 33480
Email:

Do you wish to speak this evening? ✓ Do you want to be added to the mailing list?

Comment: We live in the Reach 8 Area ocean front and the hard bottom rock is covered with sand 90+% of the time. Adding Sand would ~~not~~ not impact fish as they are only there for a few weeks a year. We deserve to be able to use the ocean for swimming. The coral reef 100-150' offshore is the home for the fish. They are not a threatened or endangered species we need sand for turtle nesting. Reach 8 should not be discriminated against.

US Army Corps of Engineers
Jacksonville District

Public Comment Form

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

First Name: Karyn Last Name: Erickson

Address: 7201 Delancey Ct

City: Sarasota State: FL Zip Code: 33420

Email: karyn@ericksonconsultingengineers.com

Do you wish to speak this evening? ✓ Do you want to be added to the mailing list? ✓

Comment:

US Army Corps of Engineers
Jacksonville District

Public Comment Form

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

First Name: Nadeen Last Name: Greenberg
Address: 3360 S. Ocean Blvd Apt 305
City: Palm Beach State: FL Zip Code: 33480
Email:

Do you wish to speak this evening? ✓ Do you want to be added to the mailing list?

Comment:

US Army Corps of Engineers
Jacksonville District

Public Comment Form

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

First Name: LEW Last Name: CRAMPTON

Address: 2335 SOUTH OCEAN BLVD

City: PALM BEACH State: FL Zip Code: 33480

Email: LEWCRAMPTON@GMAIL.COM

Do you wish to speak this evening? X Do you want to be added to the mailing list? _____

Comment: The report does not make clear the amount of mitigation is the responsibility of the Town of Palm Beach and the amount that Palm Beach County is responsible for. This is significant because a major variation exists between the two jurisdictions. At $1 million/acre, the Town has a much lower hurdle to cross. This has implications for both policy and economic decisions.

I read the entire report and - if I am mistaken - and the differential is cited somewhere, it needs to be made much clearer.

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Eileen Last Name: Cuervo

Address: 2778 So Ocean Blvd, #S202

City: Palm Beach State: FL Zip Code: 33480

Email: ECC43@aol.com

Do you wish to speak this evening? Yes Do you want to be added to the mailing list? Yes

Comment:

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Robert Last Name: DAVIDOW
Address: 2100 S. Ocean Blvd Apt 401N
City: Palm Beach State: FL Zip Code: 33480
Email: robert.davidow@gmail.com

Do you wish to speak this evening? ✓ Do you want to be added to the mailing list? _____

Comment: _____

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Mr. Harford Last Name: Kuvlesky

Address: 149 East Inlet Drive

City: Palm Beach State: FL Zip Code: 33480

Email: sandyk01@me.com

Do you wish to speak this evening? yes Do you want to be added to the mailing list? _____

Comment: _____

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Heath Last Name: Chute
Address: 3000 S. Ocean Blvd
City: Palm Beach State: FL Zip Code: 33480
Email: manager@bellaireconds.com

Do you wish to speak this evening? Yes Do you want to be added to the mailing list? Yes

Comment:

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Charles & Lena Last Name: Bonanno
Address: 3360 S. Ocean Blvd. CFV
City: Palm Beach State: FL Zip Code: [redacted] 33480
Email:

Do you wish to speak this evening? yes Charles Do you want to be added to the mailing list? yes

Comment:

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: LARRY Last Name: GOLDBERG
Address: 3360 S. OCEAN BLVD SC-S
City: PALM BEACH State: FL Zip Code: 33480
Email: larryccim@aol.com

Do you wish to speak this evening? YES Do you want to be added to the mailing list? YES

Comment:

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Richard Last Name: Hayes
Address: 3360 S. Ocean Blvd
City: Palm Beach State: FL Zip Code: 33480
Email:

Do you wish to speak this evening? X Do you want to be added to the mailing list?

Comment:

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: John R Eubanks Jr Last Name: _____
Address: 605 N. Olive Ave
City: West Palm Beach State: FL Zip Code: _____
Email: jeubanks@bigsmlaw.com

Do you wish to speak this evening? Yes Do you want to be added to the mailing list? Yes

Comment: Counsel for Bulck Carleton, Unit Owner Atrims Condominium
Address Issues Raised in Correspondence
Dated 1/6/14 to USACE

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Bukk Carlelm Last Name: Carletm
Address: 282, 3400 S. Ocean
City: Palm Beach State: FL Zip Code: 33480
Email: bgce Valley. net

Do you wish to speak this evening? ✓ Do you want to be added to the mailing list? ✓

Comment: Yes

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: CONNIE Last Name: GASQUS

Address:

City: State: Zip Code:

Email:

Do you wish to speak this evening? YES Do you want to be added to the mailing list?

Comment:

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Michael Schart Last Name: Schart
Address: 225 Dunbar Rd.
City: Palm Beach State: FL Zip Code: 33480
Email: MSchart@scharfbrothers.com

Do you wish to speak this evening? YES Do you want to be added to the mailing list? YES

Comment:

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Todd Remmel Last Name: Remmel
Address: 948 NW 37th Ave
City: Delray Beach State: FL Zip Code: 33445
Email: tremmel@surfriderpbc.org

Do you wish to speak this evening? Yes Do you want to be added to the mailing list? yes (if not on it)

Comment: ~~What will the new criteria mean in terms of sand sizes which can be used?~~
~~The plan proposes using sand~~
Comment on offshore borrow areas.

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Jean S Last Name: COHEN
Address: 3400 South Ocean
City: Palm Beach State: FL Zip Code:
Email:

Do you wish to speak this evening? NO Do you want to be added to the mailing list?

Comment: Most residents of Palm Beach were able to choose to become residents of Palm Beach. Most residents are proud to live in an A++ community. Palm Beachers are achievers in business, charity, and more. PALM Beachers who reside in Reach 8 expect that the best minds of engineers, fish + wild life, common sense and science find at least a 25 year solution, no matter what the cost. We in Palm Beach can certainly

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: Mark Last Name: Cohen
Address: 3400 South Ocean Blvd - 7H II
City: Palm Beach State: FL Zip Code: 33480
Email:

Do you wish to speak this evening? No Do you want to be added to the mailing list? Yes

Comment: The beaches in Reach 8 are a precious asset to the residents in that area. Logic dictates that the proper course of action is to be conservative in the approach to replenishing and protecting the beaches in a 25-year plan --- even at the risk of overspending up front, to avoid potentially more costly problems on the back side.

US Army Corps of Engineers
Jacksonville District

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

Public Comment Form

First Name: IRA Last Name: SMITH
Address: 3170 S. OCEAN BLVD
City: PALM BEACH State: FL Zip Code: 33480
Email: ISmith21@gmail.com

Do you wish to speak this evening? NO Do you want to be added to the mailing list? YES

Comment:

We Can learn from Children. Three Little Pigs, a childs fairy tale. The Wolf blew down the house of Straw he blew down the house of Sticks. He could not blow down the house of bricks! STORM PROTECTION IS MOST IMPORTANT. COST, INCLUDING MITIGATION COSTS ARE ~~are~~ significantly greater but so is the protection. Do We want to feel Short or build a Storm protector that can Keep us safe.

US Army Corps of Engineers
Jacksonville District

Public Comment Form

Southern Palm Beach Island
Comprehensive Shoreline Stabilization Project
Draft Environmental Impact Statement
Public Meeting
January 7, 2015

First Name: Greg Last Name: Silpe
Address: 2500 S. OCEAN BLVD. #2B1
City: Palm BEACH State: FL Zip Code: 33480
Email: gsilpe@comcast.net

Do you wish to speak this evening? NO Do you want to be added to the mailing list? YES

Comment: I AM IN FAVOR OF THE PREFERRED PLAN.
I HAVE BEEN A SEASONAL RESIDENT FOR 43 YEARS. I AM
CONCERNED ABOUT THE ENVIRONMENT BUT I AM
MORE CONCERNED ABOUT PROTECTION OF UPLAND STRUCTURES
AND BEACH RECREATION. I AM AN AVID FISHERMAN, DIVER
SURFER & BEACH COMBER. I AM ON THE BEACH DAILY.
STUDIES SHOW OVER 80% OF THE EROSION IS
A RESULT OF INLET DREDGING. IF THE USACE ARE
CAUSING THIS PROBLEM PLEASE DON'T STAND IN THE
WAY OF FIXING IT IN A COST EFFECTIVE, RESPONSIBLE
MANNER. THANK YOU

APPENDIX L

SECTION 404(B)(1) GUIDELINES EVALUATION

This page intentionally left blank

SECTION 404(B)(1) EVALUATION

Southern Palm Beach Island Comprehensive Shoreline Stabilization Project

Town of Palm Beach (SAJ-2005-07908)

Palm Beach County (SAJ- 2008-04086)

Palm Beach County, Florida

I. Project Description

a. Location. An Environmental Impact Statement (EIS) is currently being conducted to evaluate nourishing a section of the beach along the shorelines of the Town of Palm Beach, South Palm Beach, Lantana and Manalapan. There are two separate actions proposed by the Town of Palm Beach and Palm Beach County (County). The Town's proposed project is located in the southern portion of Reach 8 from Florida Department of the Environmental Protection (FDEP) beach monuments R-129-210 to R-134+135. The Town of Palm Beach's proposed project is being evaluated under Department of the Army (DA) permit number SAJ-2005-07908. The County's proposed project is located from FDEP beach monuments R-134+135 to R-138+551, and is evaluated under the DA permit number SAJ-2008-04086. This Section 404(b)(1) Evaluation considers both the Town and the County's proposals.

b. General Description.

The key features of the Town's project include the following:

- Fill design template requires 65,200 cubic yards (cy) of sand within the beach and dune between FDEP beach monuments R-129-210 and R-134+135, including 3,400 cy placed at, or below mean high water (MHW) and 61,800 cy placed above MHW.

- The Town's preferred source of sand would be obtained from an offshore borrow area. The Town would utilize previously dredged material from North Borrow Area 1 (NBA1), South Borrow Area 2 (SBA2), South Borrow Area 3 (SBA3) or any offshore sand source that is consistent with the Palm Beach Island Beach Management Agreement (BMA) cell-wide sediment quality specifications. At the

same time as sand is being obtained offshore for the Reach 7 Phipps (SAJ-2000-0380) or Mid-Town (SAJ-1995-03779) beach nourishment events, an additional 65,200 cy of sand would be dredged and stockpiled in the sand dunes within the Town of Palm Beach's limits. To nourish the beaches for the proposed project, the Town would remove the excess sand from Reach 7 Phipps or Mid-Town sand dunes, transport by truck along the existing network of public roadways to the project area, and used to nourish the beaches between FDEP beach monuments R-129-210 and R-134+135. Alternatively, sand may be obtained from previously authorized sand mines.

- Project construction is proposed between November 1 and April 30 to avoid peak turtle nesting season.

- The sand would meet the most stringent of the following sediment criteria: FDEP quality guidelines for beach sand compatibility (62B-41.007(2)(j)) and the BMA cell-wide sediment quality specifications.

- A desired renourishment interval of four years.

The key features of the County's project include the following:

- A fill design template of 77,600 cy of sand within the beach and dune between FDEP beach monuments R-134+135 and R-138+551, including 26,600 cy placed at, or below MHW, and 51,000 cy placed above MHW.

- Beach compatible sand would be obtained from upland sand mines.

- Construction of seven (7) low-profile groins placed perpendicular to the shoreline extending from the existing seawalls to the post-construction (beach nourishment) waterline (approximately 27 m [90 ft] seaward from the dune) throughout the County portion of the Project Area.

- Construction of the Project would occur between November 1 and April 30 to avoid peak turtle nesting season.

- The sand would meet the most stringent of the following sediment criteria: FDEP quality guidelines for beach sand compatibility (Section 62B-41.007(2)(j), F.A.C.), the BMA cell-wide sediment quality specifications and the County's technical sand specifications. The project will be compliant with the more strict parameters.

- A desired renourishment interval of three years.

c. Authority and Purpose. Section 404 of the Clean Water Act (33 U.S.C. 1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). The basic purpose of both projects as defined by the U.S. Army Corps of Engineers (USACE) is shoreline stabilization. For each project, the overall purpose of the project is to achieve shoreline stabilization that prevents damage to upland property during a 15-year storm event in areas with seawalls or in areas where seawalls can be state qualified and damage to habitable buildings currently without seawalls in areas where seawalls cannot be state qualified during a 25-year storm event within the southern portion of Reach 8, all of Reach 9, and the northern portion of Reach 10, in Palm Beach County, Florida.

d. General Description of Dredged or Fill Material.

(1) General Characteristics of Material. Beach compatible sand would be used to nourish the beaches. The projects considered grain sizes of sand between 0.25 and 0.60 millimeter (mm).

(2) Quantity of Material. For the Town's project, the fill design template requires 65,200cubic yards (cy) of sand within the beach and dune between R-129-210 and R-134+135, including 3,400 cy placed at, or below MHW and 61,800 cy placed above MHW. For the County's project, the fill template requires 77,600 cy of sand within the beach and dune between R-134+135 and R-138+551, including 26,600 cy placed at, or below MHW, and 51,000 cy placed above MHW. Seven (7) low-profile king pile and panel groins would be constructed along County project shoreline. It should be noted that the quantities of sand may vary at the time the

work would be conducted because the profile of the shoreline varies with climatic events.

(3) Source of Material. The County is proposing to utilize sand from an upland sand mine source. The Town is also proposing to utilize sand from an upland sand mine, however, the Town is also potentially utilizing beach compatible sand derived from dredging offshore borrow areas. This would involve dredging excess sand during the Phipps or Mid-Town projects, storing in the sand dunes along the Phipps or Mid-Town beaches, and then transporting the sand by truck to the proposed Project Area.

e. Description of the proposed Discharge Site.

(1) Location. The Town of Palm Beach would nourish the southern portion of Reach 8 from FDEP beach monuments R-129-210 to R-134+135, which is adjacent to the County's proposed project (SAJ-2008-04086). The County would nourish and construct a series of low profile groins between FDEP beach monuments R-134+135 and R-138+551.

(2) Size. The plan consists of a utilizing sand with grain sizes ranging between 0.25 and 0.60 mm.

(3) Type of Site. Both sites are located along the coastal beach in Pam Balm Beach County.

(4) Type of Habitat. The Florida beaches on the Atlantic coast are generally composed of mineral sands and shell fragments. The beaches within South Florida are characterized by carbonate rich sediments that are formed from the remains of diverse marine flora and fauna. These beaches are typically also lined with a wide variety of vegetation shaped by the tides, winds, and waves. The Study Area includes the tidal waters, intertidal and subtidal unconsolidated bottoms, intertidal and subtidal hardbottom, dry beach, and upland development. The upland development is comprised of hotels, condominiums, homes, and public parks. Much of this upland development is armored with seawalls.

(5) Timing and Duration of Discharge. Placement of sand along the beaches would need to occur outside of sea turtle nesting season (May 1 through October 31). Therefore, construction on the beaches would occur between November 1 to April 30.

f. Description of Disposal Method. Sand would be placed along the coastal beaches.

II. Factual Determinations

a. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. The total volume of sand needed to construct this alternative will be dependent on the profile of the beach at the time nourishment occurs. Construction template fill volumes (cy) were determined based on surveys conducted between 2008 to 2014. Based on the 2014 conditions, the total volume of 142,800 cy would be distributed between the two Applicants with 65,200 cy of sand placed in the Town of Palm Beach and 77,600 cy placed in the County portion of the Project Area. Of the total sand volume for each project area, sand placement below MHW includes approximately 3,400 cy within the Town of Palm Beach and approximately 26,600 cy within the County shoreline.

(2) Sediment Type. The proposed fill will be beach quality sand.

(3) Dredge/Fill Material Movement. The sand is expected to move along the coastal shoreline with tidal wave movement. The estimated toe of fill was modeled to predict where the sand movement would occur and impacts to hardbottom was considered and fully mitigated in the compensatory mitigation plan.

(4) Physical Effects on Benthos. Benthic organisms may be temporarily displaced during construction activities. Short-term impacts to benthos are expected while sand is being placed on the beaches. However, they should re-establish after the construction activities have been completed.

b. Water Circulation, Fluctuation and Salinity Determination.

(1) Water Column Effects. The water column in the immediate vicinity of sand placement is anticipated to be temporarily impacted during construction.

(2) Current Patterns and Circulation. Water patterns and circulation are not expected to adversely change as a result of the shoreline stabilization and the beach nourishment activities.

(3) Normal Water Level Fluctuations and Salinity Gradients. Water level fluctuations and salinity gradients are not expected to change as a result of the proposed shoreline stabilization and the beach nourishment activities.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of the Disposal Site. There may be a temporary increase in turbidity levels in the project area during placement of sand. State standards for turbidity will not be exceeded. Turbidity will be monitored during and post construction. Turbidity will be short-term and localized, and no significant adverse impacts are expected.

(2) Effects on the Chemical and Physical Properties of the Water Column. There may be temporary impacts to the chemical and physical properties of nearby waters during construction activities. There are no acute or chronic chemical impacts anticipated as a result of sand placement as the sand will be beach compatible material. All dredge and sand placement equipment will be subject to standard maintenance activities, and subject to proper security of fuels, lubricants etc.

(a) Light Penetration. Some decrease in light penetration may occur in the immediate vicinity of the construction area. This effect will be temporary, limited to the immediate area of construction, and will have no adverse impact on the environment.

(b) Dissolved Oxygen (DO). There may be a slight decrease in DO in the immediate construction area during placement of sand. DO levels are

anticipated to return to normal after the sand placement has occurred. This is not anticipated to cause a significant impact.

(c) Toxic Metals, Organics, and Pathogens. No toxic metals, organics, or pathogens are expected to be released by the project.

(d) Aesthetics. The aesthetic quality of the water in the immediate area of the project may be temporarily affected by turbidity during construction. This will be a short-term and localized condition. The aesthetics of the beach post-project would be important to many residents who utilize the beach.

(3) Effects on Biota.

(a) Primary Productivity and Photosynthesis. This project is not expected to have an unacceptable adverse effect on photosynthesis of marine resources. Any adverse effects would be fully mitigated with implementation of the mitigation plans.

(b) Suspension/Filter Feeders. An increase in turbidity in the canals could adversely impact burrowing invertebrate filter feeders within and adjacent to the immediate construction area. It is not expected that a short-term, temporary increase in turbidity will have any long-term negative impact on these productive organisms.

(c) Sight Feeders. No significant impacts on these organisms are expected as the majority of sight feeders are highly mobile and can move outside the affected area.

(d) Contaminant Determinations. This project is not expected to contribute to unacceptable levels of toxic materials. Beach compatible sand will be required to be utilized for nourishing the beaches and dunes.

(e) Aquatic Ecosystem and Organism Determinations.

(1) Effects on Plankton. No adverse impacts on autotrophic or heterotrophic organisms are anticipated.

(2) Effects on Benthos. No adverse impacts to benthic organisms are anticipated.

(3) Effects on Nekton. No adverse impacts on nekton are anticipated.

(4) Effects on the Aquatic Food Web. No adverse impacts on aquatic organisms are anticipated. There is expected to be a relatively minor temporary effect on the aquatic food web due to construction activities. Aquatic resources within the coastal oceans should maintain their functional value after construction activities cease.

(5) Effects on Special Aquatic Sites.

(a) Hardground and Coral Reef Communities. The applicant has minimized impacts to hardground and coral reef communities to the maximum extent practicable. Hardground and coral reef communities located within the area anticipated to be impacted directly and indirectly as a result of sand movement have been fully compensated in the compensatory mitigation plan.

(b) Sanctuaries and Refuges. This project would not adversely impact sanctuaries and refuges.

(c) Wetlands. This project would not impact wetlands.

(d) Mud Flats. Mud floats should not be impacted by this project.

(e) Vegetated Shallows. None should be impacted by the project.

(f) Riffle and Pool Complexes. None should be impacted by the project.

(6) Endangered and Threatened Species. Pursuant to Section 7 of the Endangered Species Act, the USACE initiated consultation with USFWS and NMFS on February 3, 2016, under separate letters for the Town of Palm Beach (SAJ-2005-07908) and Palm Beach County (SAJ-2008-04086) projects. The effects determinations for each federally-listed, proposed species and critical habitat with the potential to be affected from beach nourishment, dune restoration and from construction of seven low profile groins is further described in Appendix E of the EIS.

Effects determinations for federally listed and proposed species and critical habitat potentially occurring in the Action Area from beach nourishment and dune restoration.

Common Name	Scientific Name	Effects Determination
SEA TURTLES		**Nesting/In-Water**
Green	*Chelonia mydas*	Likely to adversely affect/No effect[1]
Hawksbill	*Eretmochelys imbricata*	MANLAA/No effect[1]
Kemp's Ridley	*Lepidochelys kempii*	MANLAA/No effect[1]
Leatherback	*Dermochelys coriacea*	Likely to adversely affect/No effect[1]
Loggerhead	*Caretta caretta*	Likely to adversely affect/No effect[1]
FISH		
Smalltooth sawfish	*Pristis pectinata*	No effect[1]
MAMMALS		
Florida manatee	*Trichechus manatus latirostris*	MANLAA
Florida panther	*Puma concolor coryi*	MANLAA
CORALS		
Boulder star coral	*Orbicella annularis*	No effect
Elkhorn coral	*Acropora palmata*	No effect
Mountainous star coral	*Orbicella faveolata*	No effect
Pillar coral	*Dendrogyra cylindrus*	No effect
Rough cactus coral	*Mycetophyllia ferox*	No effect
Staghorn coral	*Acropora cervicornis*	No effect

Star coral complex	*Orbicella franksi*	No effect
BIRDS		
Piping plover	*Charadrius melodus*	MANLAA
Rufa red knot	*Calidris canutus rufa*	MANLAA
PLANTS		
Beach jacquemontia	*Jacquemontia reclinata*	No effect
CRITICAL HABITAT		
Acropora spp.		Will not adversely modify the Florida Unit
Loggerhead		Will not adversely modify designated terrestrial (USFWS) or marine (NMFS) critical habitat units

Effects determinations for federally listed and proposed species and critical habitat potentially occurring in the Action Area from groin construction.

Common Name	Scientific Name	Effects Determination
SEA TURTLES		**Nesting/In-Water**
Green	*Chelonia mydas*	Likely to adversely affect/MANLAA
Hawksbill	*Eretmochelys imbricata*	MANLAA/MANLAA
Kemp's Ridley	*Lepidochelys kempii*	MANLAA/MANLAA
Leatherback	*Dermochelys coriacea*	Likely to adversely affect/MANLAA
Loggerhead	*Caretta caretta*	Likely to adversely affect/MANLAA
FISH		
Smalltooth sawfish	*Pristis pectinata*	MANLAA
MAMMALS		
Florida manatee	*Trichechus manatus latirostris*	MANLAA
Florida panther	*Puma concolor coryi*	MANLAA
CORALS		
Boulder star coral	*Orbicella annularis*	No effect
Elkhorn coral	*Acropora palmata*	No effect
Mountainous star coral	*Orbicella faveolata*	No effect
Pillar coral	*Dendrogyra cylindrus*	No effect
Rough cactus coral	*Mycetophyllia ferox*	No effect
Staghorn coral	*Acropora cervicornis*	No effect
Star coral complex	*Orbicella franksi*	No effect
BIRDS		
Piping plover	*Charadrius melodus*	MANLAA
Rufa red knot	*Calidris canutus rufa*	MANLAA
PLANTS		
Beach jacquemontia	*Jacquemontia reclinata*	No effect
CRITICAL HABITAT		
Acropora spp.		Will not adversely modify the Florida Unit

Loggerhead		Will not adversely modify designated terrestrial (USFWS) or marine (NMFS) critical habitat units

Based on continued review and analysis of the effects on the species and/or habitat and based on consultations with the USFWS and/or NMFS, the USACE may modify our determinations as appropriate. For compliance with Section 7 of the ESA, the USACE intends to utilize the following biological opinions:

- USFWS Statewide Programmatic Biological Opinion (SPBO) dated March 13, 2015
- USFWS Programmatic Piping Plover BO (P^3BO) dated May 22, 2013,
- NMFS South Atlantic Regional Biological Opinion dated September 25, 1997, and
- NMFS' Florida Statewide Programmatic Biological Opinion dated December 4, 2015.

A biological opinion or concurrence will be obtained from USFWS and NMFS before USACE issues the record of decision (ROD) and finalizes a permit decision on the Section 10/404 permit application. The USACE' decision will comply with the ESA.

(7) Other Wildlife. No adverse impacts to small foraging mammals, reptiles, or wading birds, or wildlife in general are expected. Environmental features, such as the seepage buffer area, deep water fish refugia, canal seepage littoral areas, and internal sloped levees will provide opportunities and minimize impacts to fish and wildlife.

(8) Actions to Minimize Impacts. All practical safeguards will be taken during construction to preserve and enhance environmental, aesthetic, recreational, and economic values in the project area. Specific precautions are discussed in the Chapter 5 of the Final EIS.

d. Proposed Disposal Site Determinations.

(1) Mixing Zone Determination. The dredged material will not cause unacceptable changes in the mixing zone water quality requirements as specified by the State of Florida's Water Quality Certification permit procedures. No adverse impacts related to depth, current velocity, direction and variability, degree of turbulence, stratification, or ambient concentrations of constituents are expected from implementation of the project.

(2) Determination of Compliance with Applicable Water Quality Standards. Because of the inert nature of the material to be used as fill, applicable State water quality standards would not be violated.

(3) Potential Effects on Human Use Characteristics.

(a) Municipal and Private Water Supplies. No municipal or private water supplies would be adversely impacted by the implementation of the project.

(b) Recreational and Commercial Fisheries. Recreational and commercial fisheries should not be negatively impacted by the implementation of the project.

(c) Water Related Recreation. Water related recreation in the immediate vicinity of construction will likely be impacted along the beaches. However, this will be a short-term impact. The post-project site condition would increase body surfing, snorkeling, diving, paddle boarding, and other in-water related activities.

(d) Aesthetics. Views of construction equipment, turbidity plumes, and construction activities such as sand placement would be visible to residents

and workers who are near the construction sites in the course of their regular activities, and to motorists traveling on roads adjacent to the project sites. These views would be temporary in nature. Once the project is in operation, the long-term appearance of the project site would consist of a beach with additional sand placed. The local landscape would retain the uniform and organized character that currently exists with additional sand once the project is complete.

(e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. The project would not adversely affect federal, state and local parks or similar preserves.

e. Determination of Cumulative Effects on the Aquatic Ecosystem. Please refer to Section 4.28 of the EIS. Recognizing that the Applicants intend to maintain the Project approximately every three to four years, the USACE is considering authorization under a 10-year permit that would allow for initial project construction and maintenance (renourishment) for up to two renourishments. Therefore, future renourishments at the Project Areas at least every four years is a reasonably foreseeable action included within the Cumulative Impacts Analysis (CIA). The CIA provides an evaluation of the anticipated cumulative impacts to resources resulting from past, present and reasonably foreseeable future actions.

Cumulative effects associated with beach nourishment have been offset with adherence to the 401 Water Quality Certification, successful compensatory mitigation for unavoidable impacts, adherence to the construction conditions for endangered species such as manatee, sawfish and swimming sea turtles, nesting surveys, and with construction activities occurring outside the nesting periods for protected species. However, as long as the coastal environment remains dynamic, ongoing erosion and accretion effects will continue as well as the potential for cumulative effects. The Corps has determined that the projects would not result in an unacceptable cumulative impacts.

f. Determination of Secondary Effects on the Aquatic Ecosystem. Studies have shown that beach replenishment frequently leads to more development in greater density within shorefront communities, encouraging more drastic stabilization measures in the future. Shoreline management creates an upward spiral of initial protective measures resulting in more expensive development, which leads to the need for more and larger protective measures.

Turbidity impacts are chronic perturbations that cause long-term reductions in primary and secondary productivity of reef epibenthic communities by reducing the amount of light available for photosynthesis. Local, short-term impacts of sedimentation will occur adjacent to the beach fill sites and offshore borrow areas during project construction. Preventative measures and monitoring, outlined in the project permits, during construction should minimize these impacts. There will be no unacceptable adverse secondary impacts on the aquatic ecosystem as a result of the construction.

III. Findings of Compliance or Non-compliance with the Restrictions on Discharge.

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. No practicable alternative exists which meets the study objectives that does not involve discharge of fill into waters of the United States.

c. After consideration of disposal site dilution and dispersion, the discharge of fill materials will not cause or contribute to, violations of any applicable State water quality standards for Class III waters. The discharge operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

d. It is anticipated that the placement of approximately 150,000 cubic yards (cumulative amount) of sand along the shoreline will not jeopardize the continued existence of any species listed as threatened or endangered or result in the likelihood of destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973, as amended. The USFWS is currently reviewing the project to determine if they concur with the USACE's determinations.

e. The placement of fill material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic species and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values will not occur.

f. On the basis of the guidelines, the proposed disposal site for the discharge of dredged material is specified as complying with the requirements of these guidelines.

APPENDIX M

CZMA CONSISTENCY EVALUATION

This page intentionally left blank

TABLE OF CONTENTS

C COASTAL ZONE CONSISTENCY EVALUATION

C.1 FLORIDA COASTAL ZONE MANAGEMENT PROGRAM FEDERAL CONSISTENCY EVALUATION PROCEDURES – PALM BEACH COUNT SHORELINE SATABILIZATION PROJECT

C.1.1 Chapter 161, Beach and Shore Preservation.

The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: *The proposed project work is seaward of the mean high water line and would affect shorelines or shoreline processes.*

C.1.2 Chapters 163 (part II), 186 and 187, County, Municipal, State and Regional Planning.

These chapters establish the Local Comprehensive Plans, the Strategic Regional Policy Plans, and the State Comprehensive Plan (SCP). The SCP sets goals that articulate a strategic vision of the State's future. Its purpose is to define in a broad sense, goals and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: *The proposed projects are being coordinated with various Federal, State and local agencies through the National Environmental Policy Act process and the regulatory permit evaluation. The proposed projects, which are reviewed by the Florida Department of Environmental Protection Agency (FDEP), would achieve the goals of this chapter by stabilizing a 2-mile segment of coastal beach shoreline along the Towns of Palm Beach, South Palm Beach, Lantana and Manalapan from FDEP beach monuments R-129-210 to R-138+551. The project would support the continued orderly social, economic and physical growth of the region.*

C.1.3 Chapter 252, Disaster Preparation, Response and Mitigation.

This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: *The proposed projects would not increase the state's vulnerability to natural and manmade disasters. Emergency response and evacuation procedures would not be negatively impacted by the proposed action. Shoreline stabilization along the coastal beaches would provide storm protection for residents and their upland structures. Therefore, the proposed projects are consistent with the policies of Chapter 252, F.S.*

C.1.4 Chapter 253, State Lands.

This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; near shore reefs; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: *The proposed projects will not affect the ability of the state to manage state-owned and sovereign submerged lands and property. The beach nourishment projects would not adversely affect state resources. The proposed projects would construct artificial reefs as compensatory mitigation for any impacted hardbottom and/or corals. The proposed projects would comply with the intent of this chapter.*

C.1.5 Chapters 253, 259, 260, and 375, Land Acquisition.

This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: *The proposed projects will not affect the ability of the state to acquire land or dispose of state lands. The proposed projects would comply with the intent of this chapter.*

C.1.6 Chapter 258, State Parks and Aquatic Preserves.

This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: *The proposed projects will not affect the ability of the state to manage state parks or preserves. The proposed projects are consistent with this chapter.*

C.1.7 Chapter 267, Historic Preservation.

This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities and for implementing the Section 106 of the National Historic Preservation Act of 1966, as amended; and the National Environmental Policy Act of 1969, as amended.

Response: *One potential cultural resource site exists within the 2-mile segment of the beach. The site is located on the northeastern boundary and would require further investigation to confirm the nature of the resource. It was previously recommended that these cultural resources be avoided with buffers during construction in order to avoid impacts. The Corps is consulting with the State Historic Preservation Officer to*

ensure compliance with Section 106 of the National Historic Preservation Act. The projects will be consistent with the goals of this chapter.

C.1.8 Chapter 288, Economic Development and Tourism.

This chapter directs the State to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: *The proposed project would achieve the goals of this chapter by contributing to the economic development of the area by increasing the employment opportunities for local construction personnel which would support economic diversification. Nourishing the beaches would place additional sand on the beaches, which would support recreational activities for residents and tourists. The proposed projects could improve local tourism. Therefore, the proposed projects are consistent with this chapter.*

C.1.9 Chapters 334 (Transportation Administration), 335 (State Highway System), 338 (Intrastate Highway System and Toll Facilities) and 339 (Public Transportation).

These chapters authorize the planning and development of a safe, balanced and efficient transportation system.

Response: *Roadways could experience short-term impacts through an increase in construction traffic during construction activities. Any impacts from construction traffic would be short term and would not cause extended delays on adjacent roadways or highways.*

C.1.10 Chapter 370, Saltwater Living Resources.

This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and to conduct scientific, economic, and other studies and research.

Response: The proposed projects are not expected to have an unacceptable adverse impact on saltwater resources. Hardbottom burial associated with the proposed Project will reduce the amount of sea turtle foraging habitat within the construction area and for the areas where sand is anticipated to migrate. However, the presence of hardbottom beyond project impacts provides additional foraging opportunities for sea turtles. The coastal beaches are dynamic systems. While some areas will experience project-related sediment accumulation, other areas are anticipated to

scour resulting in exposed hardbottom. Additionally, it is anticipated that artificial reefs will be constructed as mitigation to offset hardbottom impacts. Mitigative artificial reefs are designed and placed to mimic the impacted natural hardbottom, and will likely develop a similar benthic community to that found on natural hardbottom. Therefore, it is expected that mitigation will compensate for loss of sea turtle foraging habitat due to burial of natural hardbottom habitat. The proposed projects will not affect the ability of the state to preserve, manage or protect saltwater living resources.

C.1.11 Chapter 372, Living Land and Freshwater Resources.

This chapter establishes the Game and Freshwater Fish Commission (now called the Florida Fish and Wildlife Conservation Commission) and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions that provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: *By stabilizing the shoreline and providing maintained beaches, the proposed projects are not expected to have an adverse effect on freshwater aquatic life and wild animal life. The proposed projects will be coordinated with the Florida Fish and Wildlife Conservation Commission for review.*

C.1.12 Chapter 373, Water Resources.

This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: *The project would not alter the withdrawal, diversion, storage, or consumption of water. The project is consistent with the goals of this chapter.*

C.1.13 Chapter 376, Pollutant Spill Prevention and Control.

This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: *The proposed projects will not increase pollutant discharge in the Atlantic Ocean. As a condition of the permit, the applicants would be prohibited from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor adopt safe and sanitary measures for the disposal of solid wastes. The permit if found appropriate, will also require the permittees to use only clean material suitable for either beach nourishment or deployment as artificial reefs. Therefore, the proposed action is consistent with the policies of Chapter 376, F.S.*

C.1.14 Chapter 377, Oil and Gas Exploration and Production.

This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: *This project does not involve the exploration, drilling, or production of gas, oil or petroleum product and therefore, this chapter does not apply.*

C.1.15 Chapter 380, Environmental Land and Water Management.

This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact of proposed large-scale development on natural systems.

Response: The proposed project is not a large-scale development and would not affect environmental lands. The project is consistent with the goals of this chapter.

C.1.16 Chapter 388, Arthropod Control.

This chapter provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: *The project would not further the propagation of mosquitoes or other pest arthropods.*

C.1.17 Chapter 403, Environmental Control.

This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Regulation (now a part of the Florida Department of Environmental Protection).

Response: *An Environmental Impact Statement addressing project impacts will be reviewed by the appropriate resource agencies including the Florida Department of Environmental Protection. Environmental protection measures will be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources will occur. Water Quality Certification will be sought from the State prior to construction. The project complies with the intent of this chapter.*

C.1.18 Chapter 582, Soil and Water Conservation.

This chapter establishes policy for the conservation of state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

Response: *The proposed projects are designed to stabilize the shoreline and minimize sand erosion. At all times during the construction, the applicants shall use best management techniques for erosion and sedimentation control. Project construction and implementation will include appropriate erosion control plans and measures to ensure compliance with the intent of the chapter.*